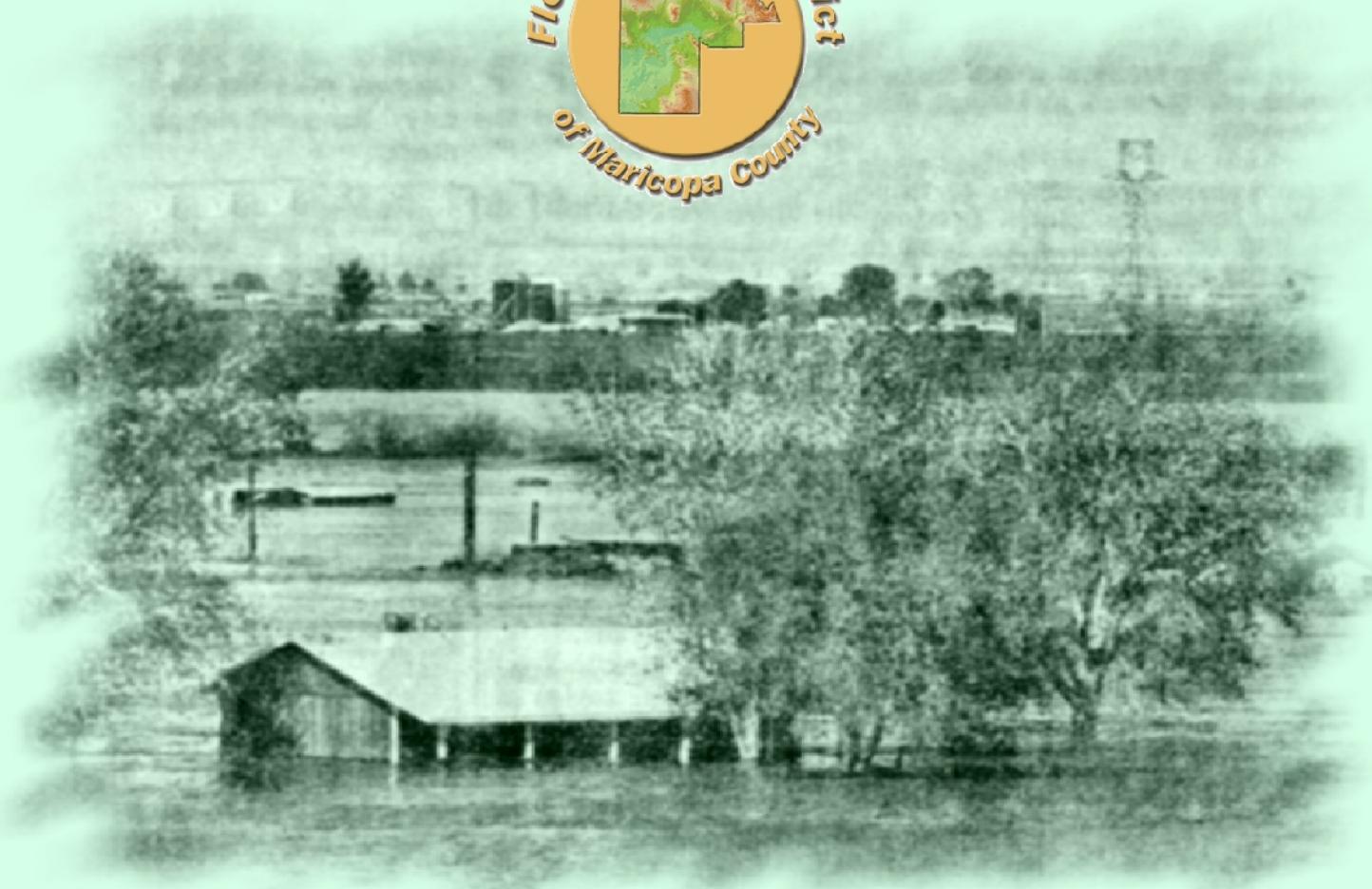


# DURANGO AREA DRAINAGE MASTER PLAN

## FCD #99-41

### HYDROLOGY REPORT

Prepared For:



Prepared By:



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September, 2001



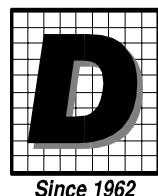
**DURANGO AREA DRAINAGE MASTER PLAN  
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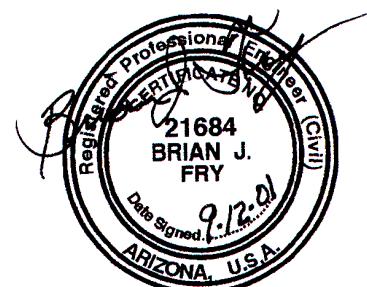
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# DURANGO AREA DRAINAGE MASTER PLAN HYDROLOGY REPORT

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## **DURANGO AREA DRAINAGE MASTER PLAN HYDROLOGY REPORT**

### **I. INTRODUCTION**

#### **A. General**

This hydrology report is prepared for the Flood Control District of Maricopa County (FCDMC) as part of the Durango Area Drainage Master Plan (ADMP). The purpose of the project is to quantify the extent of flooding problems and develop alternative solutions to the flooding problems. Additionally, this project delineates areas of flooding behind the Union Pacific Railroad (UPRR) from 35<sup>th</sup> Avenue to 69<sup>th</sup> Avenue and along the entire reach of the Buckeye Feeder Canal (BFC) from the Agua Fria River to 91<sup>st</sup> Avenue. This report documents the development and recent update of the project hydrology. A companion report documents the delineation of the 100-year floodplain.

#### **B. Scope of Study**

The Durango ADMP encompasses approximately 54 square miles which includes portions of the cities of Avondale, Tolleson, and Phoenix as well as unincorporated Maricopa County. The study area is bounded by the Salt/Gila and Agua Fria Rivers and extends northward to I-10 and eastward to I-17. In addition to developing alternative solutions to flooding problems, the project also includes field survey work, hydraulic analysis for delineating floodplains, and an update of 53 square miles of watershed hydrology. The Study Area is shown on **Figure 1**.

The hydrology for the Tolleson area was originally developed by the FCDMC in 1995 for watershed conditions that existed at that time. Land use information was originally obtained from Salt River Project (SRP) and updated by the FCDMC based on field observations and 1990 Landiscor aerial photographs. Although the watershed sub-basin boundaries, routing parameters, and model sequence have been modified in later studies, the land use for existing conditions has not been updated since the original 1995 model development. A key element in the scope of work for this project is to update the land use runoff parameters to reflect development that has occurred since 1995. Land use data is updated throughout the watershed based on color aerial photographs taken February 15, 2000.

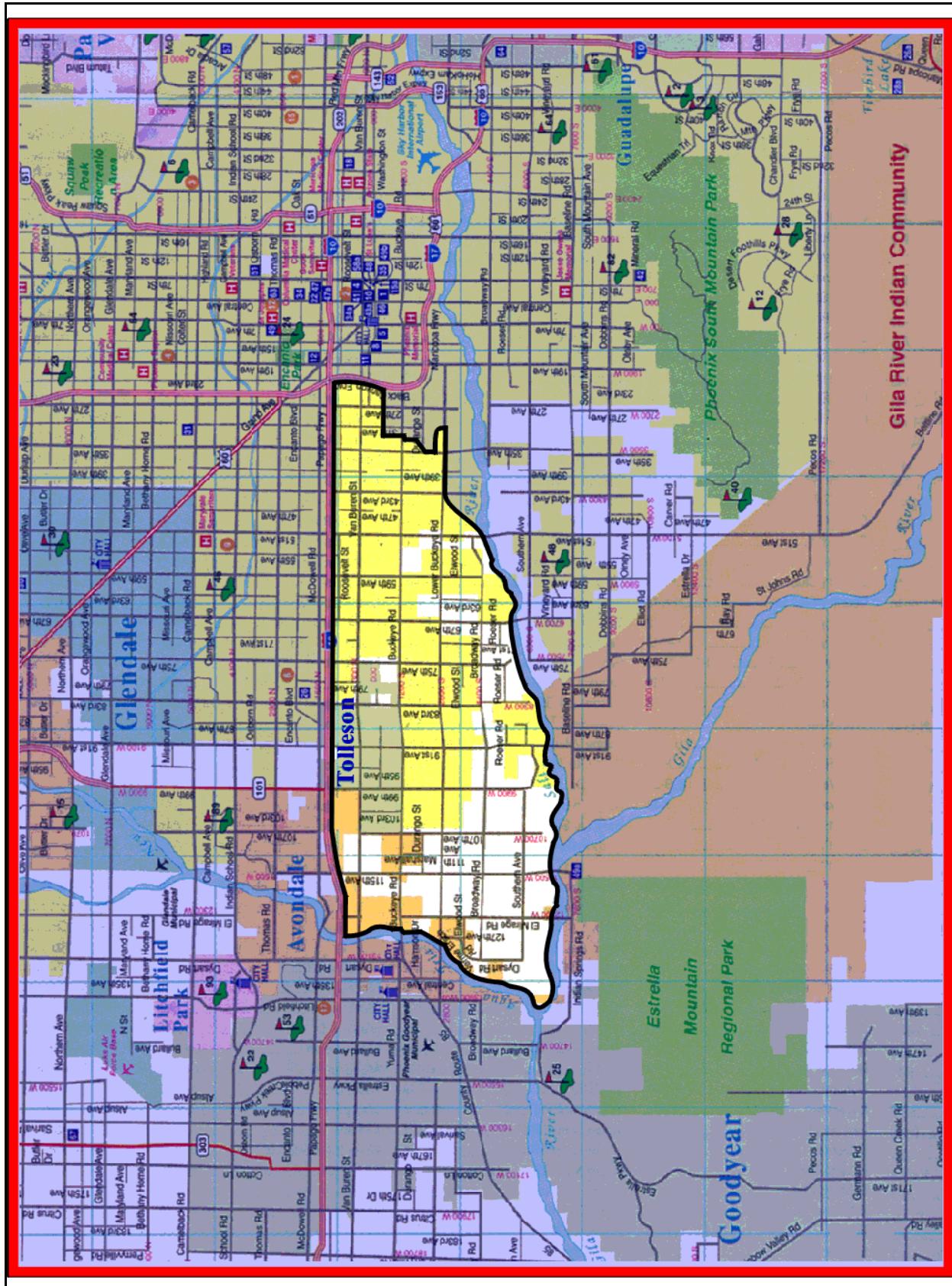


Figure 1 - Study Area

### C. Previous Studies and Reports

The City of Tolleson, west of 75<sup>th</sup> Avenue was first studied in 1978 by Harris-Toups Associates as part of the *Flood Insurance Study, City of Tolleson, Maricopa County, Arizona*. Hydrology was developed for the area using Soil Conservation Service methods for the 100-year flood. Ponding limits were identified for the 100-year, 24-hour storm and flood hazard zones were identified. Interstate 10 was not constructed at the time of the study. The report indicates that at the time the Arizona Department of Transportation (ADOT) was delaying construction of Interstate 10. Therefore, the study did not account for the impacts of Interstate 10.

The Tolleson area was studied again in 1996 by Dibble & Associates as part of the *Floodplain Delineation of the Tolleson Area* (Project FCD #95-26). Hydrology used in the Tolleson study was based on FCDMC hydrology prepared in 1995 using methodology contained in the *Drainage Design Manual for Maricopa County, Arizona, Volume I, Hydrology* (Hydrology Manual). The FCDMC hydrology accounted for the flow diversions created by construction of Interstate 10 and used USGS mapping supplemented with field reconnaissance for sub-basin delineation and physical sub-basin data. As part of the Tolleson study, Dibble & Associates updated the sub-basin data using March 1994 detailed mapping prepared at 1"=200' scale with a 2 foot contour interval supplemented with field surveys along the UPRR and the Roosevelt Irrigation District (RID) Canal. Hydrograph routing parameters and flow diversions were also updated in the Tolleson study. The final Tolleson model was accepted by the Federal Emergency Management Agency (FEMA) and forms the basis for the current update. A detailed explanation of the changes and updates made to the FEMA approved model is presented in Section III, Revisions to Model.

### D. Watershed Description

The approximate watershed limits are Interstate 10 on the north, the Salt/Gila River on the south, Interstate 17 on the east and the Agua Fria River on the west. The direction of runoff is generally from the northeast to the southwest. The watershed is characterized by agricultural land with increasing amounts of residential and industrial development. As a result, overland flow is the predominant flow condition. The northern watershed boundary was created by the construction of Interstate 10. The interstate intercepts runoff from the north and diverts it to the Agua Fria River.

Three features that play a significant role in defining the drainage patterns in the watershed are the RID Main Canal, the UPRR and the BFC. The RID Canal and the UPRR are elevated through the watershed. Roadways that cross these features typically rise to meet the elevated grades and proceed over the top. This causes water to form ponding “cells” behind these features. Runoff will continue to pond until it either overtops the railroad/canal, or until it overtops the sag portion of the crossing roadways. Overtopping flows are then directed westerly along the railroad or canal, or are directed southerly over the railroad or canal, or a combination of the two.

The BFC is the dominant drainage feature in the southwest portion of the watershed. The BFC is an SRP owned and operated irrigation tailwater ditch. The BFC was not designed to convey storm water. However, the BFC is at a low point in the terrain and receives runoff during storm events. During storm events that exceed the channel capacity, runoff spreads beyond the limits of the canal and flows in an overland flow fashion causing shallow flooding of the adjacent agricultural fields. Flooding of homes has been reported along the BFC in the vicinity of 115<sup>th</sup> Avenue.

Other features that define the flow pattern are roads and local irrigation ditches. Low flows accumulate along roadways and ditches, converging at road intersections at the northeast corner of each road intersection. Higher flows accumulating along roadways and ditches may overtop the roadway or ditch and proceed in the direction of the predominant land slope.

## **II. HYDROLOGIC ANALYSIS**

The hydrologic analysis serves two primary purposes. The first is to provide runoff data for delineation of flood hazard areas upstream from the UPRR and the RID Canal as well as along the BFC. The second is to establish design discharges for planning and design of flood control improvements as part of the Durango Area Drainage Master Plan study. Runoff is computed for both the 100-year, 24-hour and 6-hour storms under watershed conditions existing as of the February 15, 2000 aerial photo date.

### A. Methodology

Hydrology for the Durango area is developed using the U.S. Army Corps of Engineers, *HEC-1 Flood Hydrograph Package* (HEC-1) computer program. Guidance is given in the *Drainage Design Manual for Maricopa County, Arizona, Volume I, Hydrology* (Hydrology Manual) for application of the HEC-1 program within Maricopa County. Additionally, the computer program *Drainage Design Management System for Windows* (DDMSW), developed by the FCDMC, is used to aid in the application of the methods described in the Hydrology Manual.

### B. Subbasin Delineation

The 53.4 square mile study area is divided into 115 subbasins ranging in size from 0.04 to 1.35 square miles. Drainage subbasins are delineated along predominant features that affect the flow direction. Subbasin boundaries are identified along the UPRR, BFC, RID Canal and along major roadways, typically on section lines and mid-section lines. The individual ponding “cells” are delineated as separate subareas to allow determination of the inflow hydrograph contributing to the ponding in each cell. Subbasin delineations are made using the 200 scale mapping supplemented with field investigations and aerial photos. The drainage subareas are shown on **Figure 2** and on the foldout Exhibit 1 (Sub-basin Boundaries) contained in a folder at the back of the report.

### C. Rainfall

Point precipitation rainfall values are taken from NOAA Atlas II, Volume VIII. The PREFRE program within DDMSW is used in conjunction with the precipitation isopluvial maps contained in the Hydrology Manual to establish the point precipitation values shown in **Table 1**.

Point precipitation values are reduced based on contributing drainage area using depth-area reduction factors from the Hydrology Manual. A table of depth-area rainfall values is input into the HEC-1 model. The HEC-1 model computes runoff hydrographs for each rainfall value provided in the table. The model then interpolates between hydrographs to obtain the appropriate hydrograph based on the total watershed area contributing runoff to the point of interest. The SCS Type II rainfall distribution is used for the twenty-four hour duration storm. The storm patterns described in the Hydrology Manual are used for the six hour duration storm.

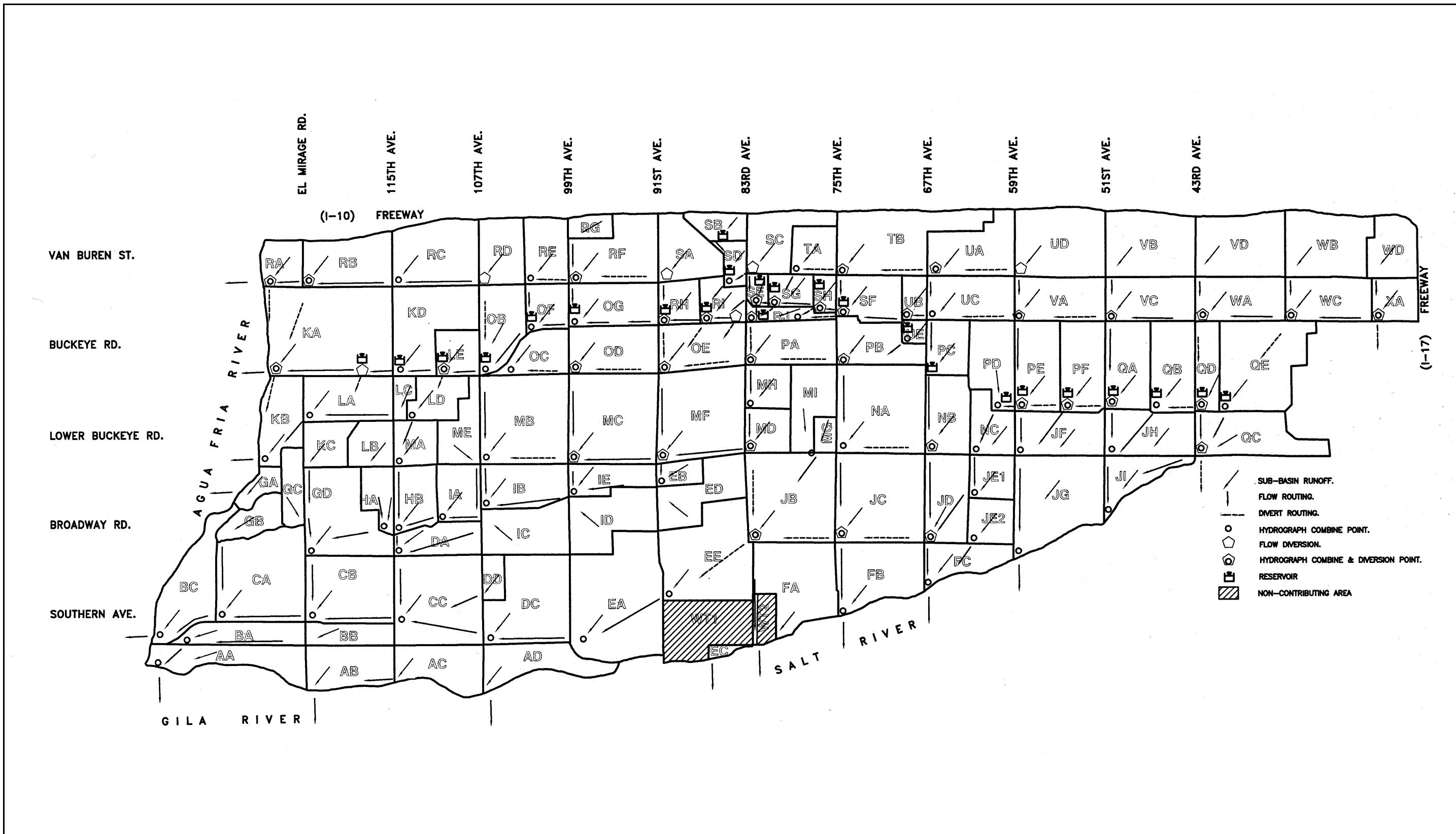


Figure 2 - Drainage Subareas

**Table 1** - Point Precipitation Values

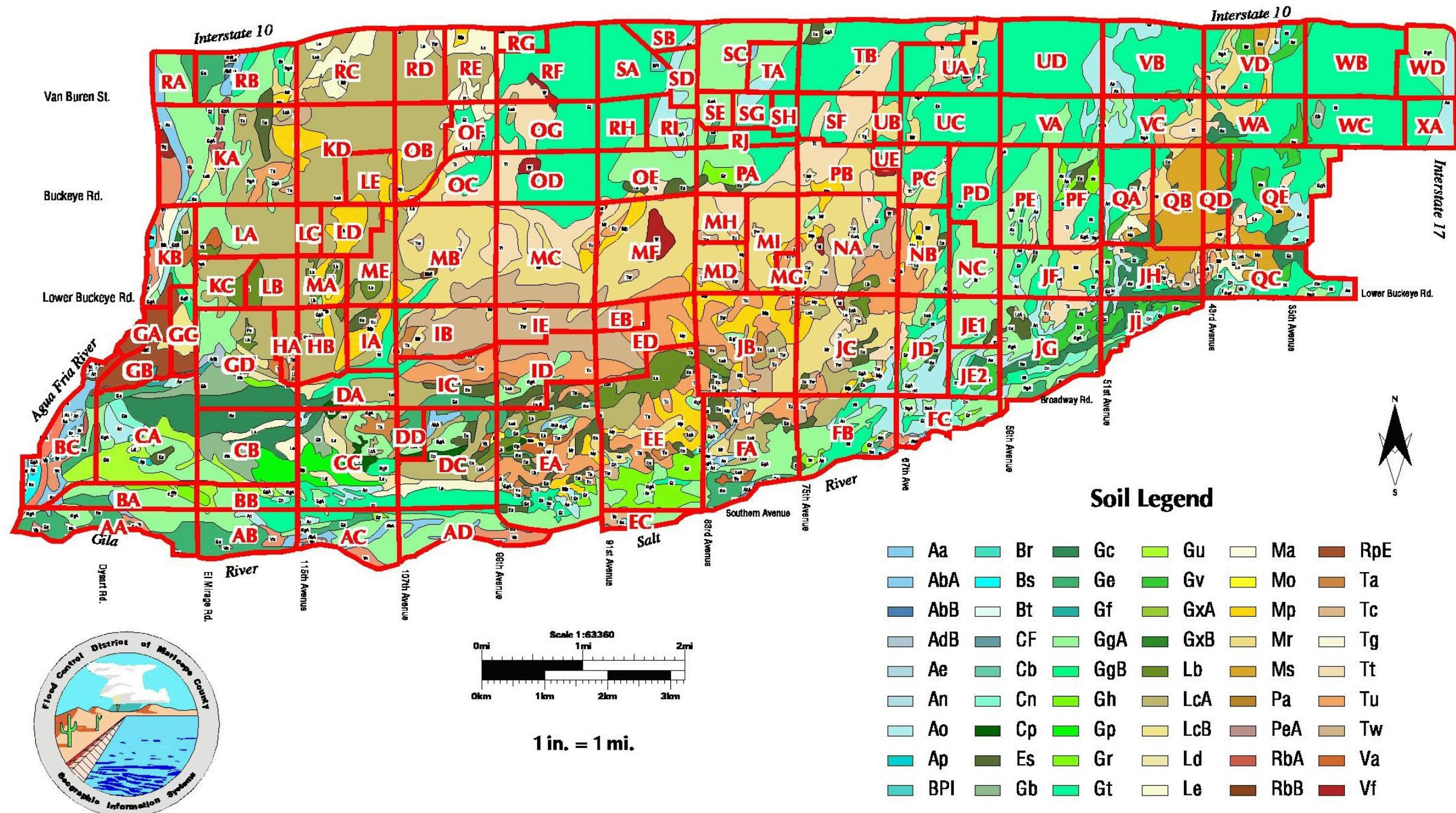
Primary Zone:	7	Latitude:	33.40	Elevation:	990	
Short Duration Zone:	8	Longitude:	112.20			
Point Values (in)						
Duration	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
<b>5 MIN</b>	0.33	0.43	0.49	0.59	0.67	0.74
<b>10 MIN</b>	0.49	0.64	0.75	0.90	1.02	1.14
<b>15 MIN</b>	0.59	0.80	0.95	1.15	1.30	1.46
<b>30 MIN</b>	0.78	1.08	1.28	1.55	1.76	1.97
<b>1 HOUR</b>	0.96	1.33	1.58	1.93	2.20	2.47
<b>2 HOUR</b>	1.05	1.46	1.74	2.13	2.43	2.73
<b>3 HOUR</b>	1.11	1.55	1.85	2.27	2.58	2.90
<b>6 HOUR</b>	1.22	1.72	2.06	2.52	2.88	3.23
<b>12 HOUR</b>	1.34	1.90	2.28	2.81	3.21	3.61
<b>24 HOUR</b>	1.45	2.09	2.51	3.09	3.54	3.99

#### D. Rainfall Losses

Rainfall losses are modeled using the Green and Ampt infiltration equation. The rainfall loss parameters are developed using guidance provided in the Hydrology Manual. The Green and Ampt infiltration equation parameters are based on logarithmic area-averaging of the map unit hydraulic conductivities (XKSAT) for the mapped soils in each subbasin, and the selection of capillary suction (PSIF) and soil moisture deficit (DTHETA) based on the calculated subbasin value of XKSAT. The bare ground XKSAT values for each subbasin are then adjusted for vegetation cover. The calculation of these parameters is accomplished within the DDMSW.

Soil types within the watershed are determined from the SCS *Soil Survey of Maricopa County, Central Part*, September 1977. Soil types were obtained from the FCDMC Geographic Information System (GIS) which provided the area of each soil type within each subbasin. This data was imported into DDMSW for use in computation of PSIF, XKSAT and DTHETA. Soil types are shown on **Figure 3** for the watershed area.

## **Subbasins and Soils in the Durango Area Drainage Master Plan Area**



**Figure 3 - Soil Types**

The land use data from the *Floodplain Delineation of the Tolleson Area* is updated in this study based on field observations and color aerial photographs taken on February 15, 2000. The drainage subbasin boundary and land use maps were superimposed on a TIFF image of the color photos. The different land use areas were then “traced” on the computer screen from the photo image. Data from the updated land use exhibit was then input into the FCDMC’s GIS system to generate the area of each land use type within each subbasin for input into the DDMSW. Current land use is shown on **Figure 4** for the watershed area. The soil loss parameters are adjusted based on the effective impervious area and the percent of vegetative cover. Representative values used for each land use classification are shown on **Table 2**. A detailed breakdown of the soil, land use, and subbasin loss parameter data generated by DDMSW is contained in the **Appendix**.

**Table 2 - Land Use Parameter Default Values**

Land Use Code	Description	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)
1	Crops	Normal	80.00		0.50
2	Citrus	Normal	80.00		0.70
3	Low Intensity Comm	Normal	80.00	90	0.15
4	M.H.	Normal	50.00	50	0.10
6	School	Normal	75.00	40	0.20
7	H.D.R.	Normal	60.00	40	0.15
8	Power Station	Normal	60.00	55	0.20
9	Industrial	Normal	70.00	55	0.10
11	Public Facility	Normal	75.00	65	0.15
12	L.D.R.	Normal	50.00	15	0.20
13	M.D.R.	Normal	50.00	30	0.15
14	Med Intensity Comm	Normal	75.00	90	0.15
17	Park	Normal	90.00		0.20
22	Vacant	Dry	15.00		0.35
23	Whse Comm	Normal	75.00	90	0.05
24	River	Normal	90.00		0.20
25	Stockyard	Normal	10.00		0.50

## Subbasins and Landuse in the Durango Area Drainage Master Plan Area

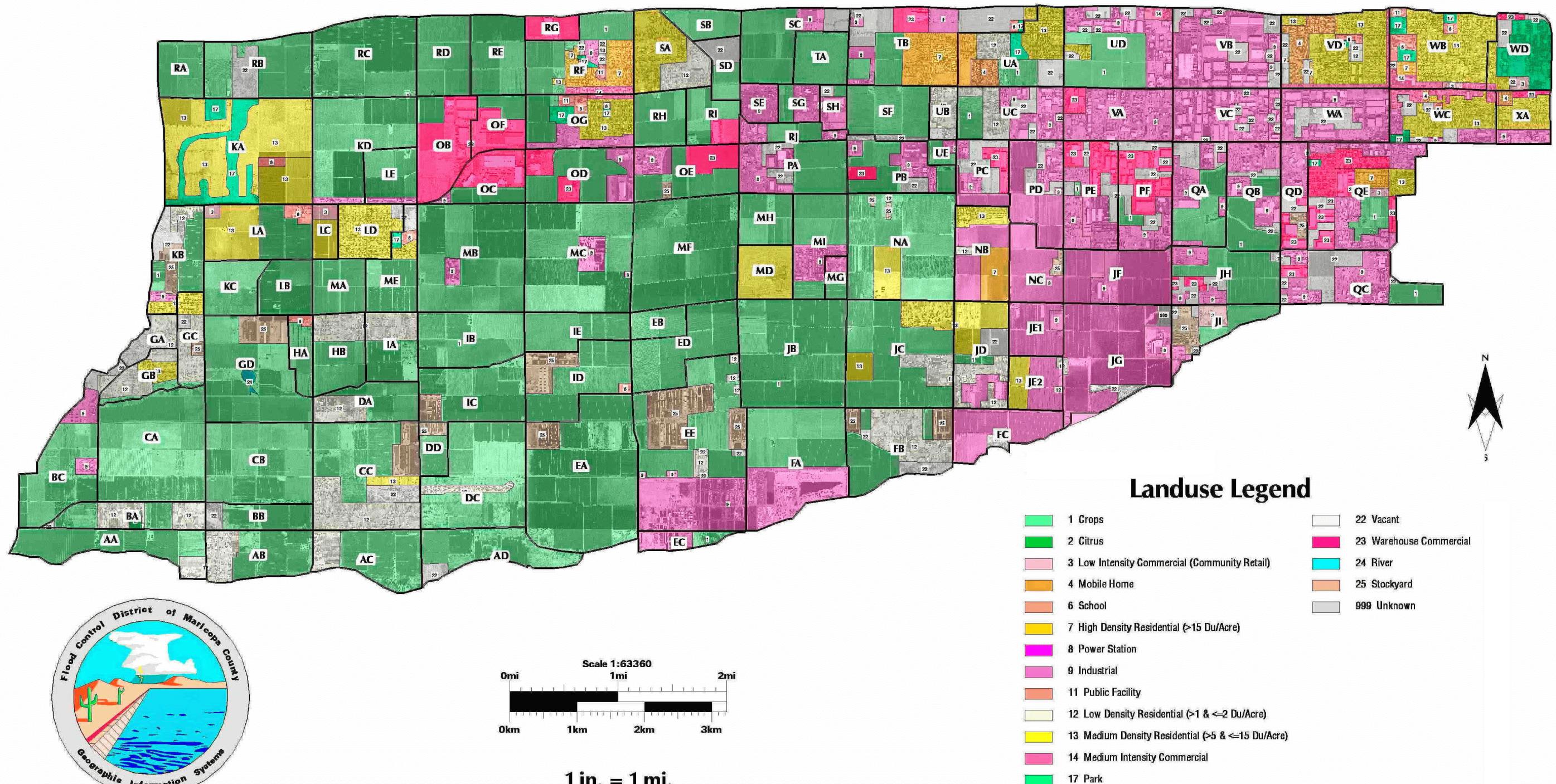


Figure 4 - Current Land Use

#### E. Unit Hydrograph

The Agricultural S-graph was originally used to develop the unit hydrograph for all subbasins. However, due to development, a combination of both the Agricultural and Valley S-graphs is now used (Refer to section III - **REVISIONS TO MODEL**). Guidance is provided in the Hydrology Manual for application of the S-graphs and DDMSW is used to develop the unit hydrographs and update the HEC-1 model. The S-graph procedure requires computation of the subbasin lag. The equation used to compute lag is;

$$LAG = 24 K_n \left( \frac{L \times L_{ca}}{S^{0.5}} \right)^{0.38}$$

Where

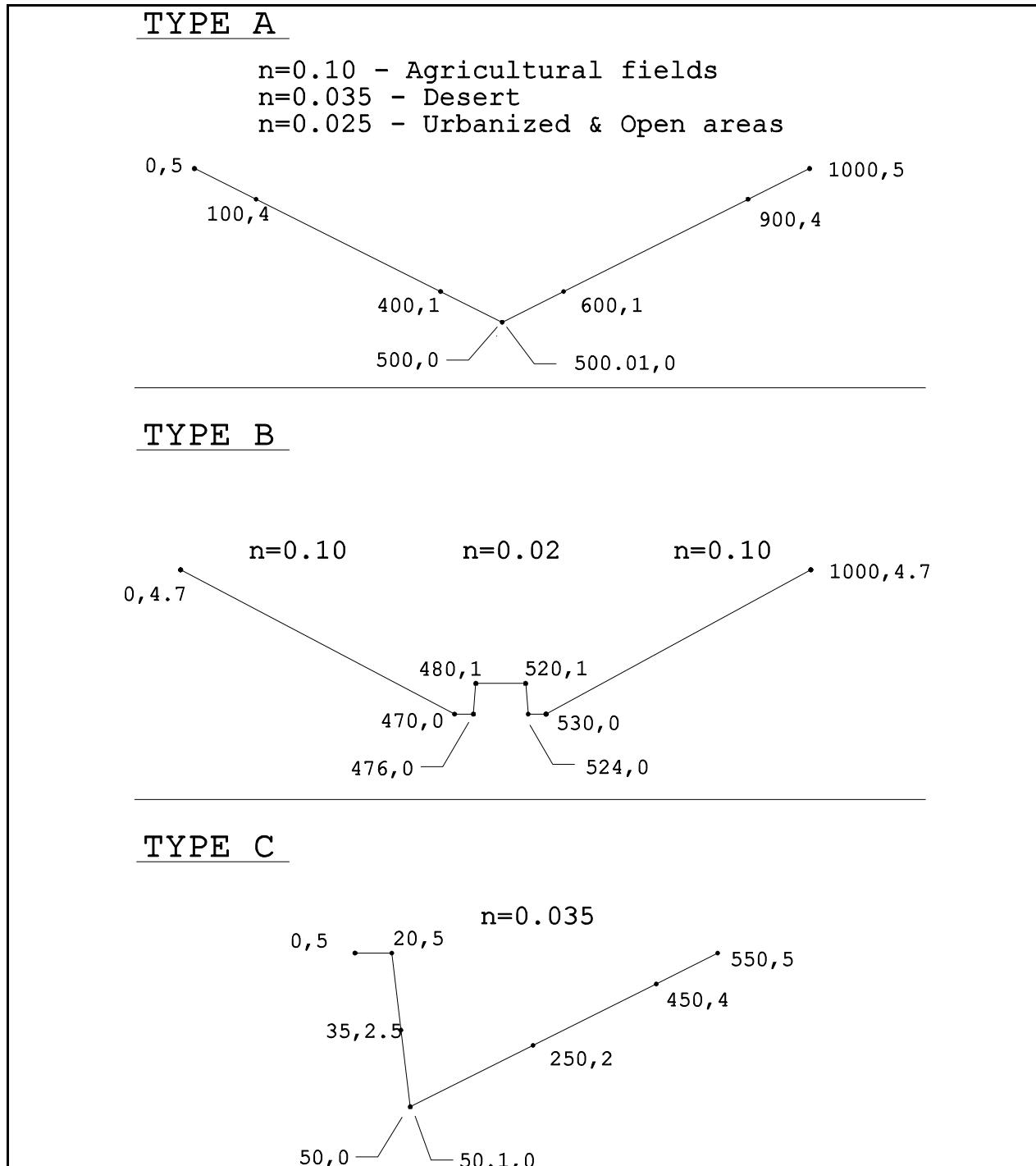
Lag	=	lag time, hrs
L	=	length of longest flow path, miles
$L_{ca}$	=	length along L to a point opposite of the centroid, miles
S	=	flow path slope, ft/mile
$K_n$	=	resistance coefficient

DDMSW computes the resistance coefficient,  $K_n$ , for each subbasin based on  $K_n$  values assigned to each land use type within the study area. The  $K_n$  values and roughness category used for each land use type are shown in **Table 2**. The parameters used to compute lag time and the resulting lag times used in the HEC-1 model are summarized with the subbasin data in the **Appendix**.

#### F. Channel Routing

Channel Routing is modeled using the normal depth and storage routing options within HEC-1. The normal depth option uses an 8-point cross-section which is representative of the routing reach. Outflows are computed for normal depth using Manning's equation. Storage is cross-sectional area times reach length. Storage and outflow values are computed for 20 evenly spaced stages beginning at the lowest point on the cross-section to the elevation specified either in the RC record or to the maximum elevation in the RY record. The cross-section is extended vertically at each end to the maximum stage required by HEC-1. Three typical cross-sections were developed to depict the types of overland routing that occur within the Durango area. The channel types used are shown on **Figure 5**. The Type A channel section is used for sheet flow conditions as would occur through agricultural fields or open space with no defined channel section. The Type B channel section is

used for flow along roadways. The section includes a raised roadway section and grader ditches on each side with the sides extended in each direction to include runoff extending beyond the right-of-way into adjacent fields or open space. The Type C channel section is used for flow along an embankment as would occur for flows traversing the UPRR or RID Canal.



**Figure 5 - Channel Types**

The HEC-1 routing parameter, NSTPS, is an integer value that is estimated based on channel velocity. NSTPS is the number of steps to be used in the storage routing computation (RS record) and is usually about equal to:

$$\left( \frac{\text{Length}}{\text{Velocity}} \right) / \text{NMIN}$$

Where

Length	=	Reach Length
Velocity	=	Flow Velocity
NMIN	=	Time Interval

In the case of reservoir routing, NSTPS is to be taken as 1 (per the HEC-1 manual). However, when routed velocities are very small and approaching a reservoir-like state (as is the case along the UPRR) the calculated value for NSTPS gets very large. Furthermore, it has been observed that as NSTPS increases, so does the routed peak discharge. Recognizing this paradox, an upper limit for NSTPS of 15 has been adopted.

Since HEC-1 does not report routing velocity, velocity is estimated using Manning's equation. Where routing is modeled with HEC-RAS, the average velocity throughout the reach is used for the computations.

The storage routing option within HEC-1 uses a storage versus outflow relationship for a given routing reach. The storage volumes are obtained from the HEC-RAS model by running a range of discharges through the reach. The storage routing option is used for HEC-1 routing along the BFC and along the floodplain delineation study reach along the UPRR extending from 69<sup>th</sup> Avenue to 35<sup>th</sup> Avenue. Except as just noted, all routing within the HEC-1 model was classified as Type A, B, or C. A summary of the routing parameters used for each channel routing operation in the HEC-1 file is contained in the **Appendix**.

## G. Flow Splits

Runoff drains generally in a southwesterly direction. As overland flow reaches major intersections there is sometimes a flow split with a portion of the flow draining south and a portion draining west along the intersecting roads. At some point along the roads, the flow may overtop and proceed along the original southwesterly flow direction. This flow condition is modeled by using the divert option within HEC-1. At intersections where diversions occur, the percentage of flow going each direction is specified. It is recognized that in reality not all the runoff will reach the intersection and not all the runoff will be diverted the entire distance to the next concentration point. However, the HEC-1 model is limited to modeling each hydrograph at a specific concentration point. The modeling of flow splits and subsequent flow routing along sub-basin boundaries is representative of the broad, overland nature of the true flow conditions.

The actual flow split ratios at intersections are determined by estimating the overland flow angle of approach to the intersection and determining the percentage of the flow that would encounter a north-south street and an east-west street of the specified length. The approach angle is estimated based on the resultant of the slopes of each street according to the equation:

$$\text{Angle} = \arctan \left( \frac{\text{Slope}_{n-s}}{\text{Slope}_{e-w}} \right)$$

The flow ratio (FR) is computed according to the following equation:

$$FR_s = \frac{\frac{L_{e-w}}{S_{e-w}}}{\frac{L_{e-w}}{S_{e-w}} + \frac{L_{n-s}}{S_{n-s}}}$$

Where:

$FR_s$  = Flow ratio for flow going to the south, across the east - west street.

$L_{e-w}, L_{n-s}$  = East - west and north - south street lengths, respectively (ft)

$S_{e-w}, S_{n-s}$  = East - west and north - south street slopes, respectively (ft/ft)

The derivation of flow split values is summarized in **Table 3**.

**Table 3 - Flow Split Analysis**

Subarea Designation	E-W Street (ft)		N-S Street (ft)		Flow Ratio		Flow Angle (deg)
	Length	Delta Y	Length	Delta Y	To South	To West	
UD	5280	8	2640	6.2	0.76	0.24	57
UA	5280	7	2640	6.59	0.79	0.21	62
TB	5280	9.6	2640	6.91	0.74	0.26	55
SC	2640	5	2640	4.2	0.46	0.54	40
SA	3960	8.9	2640	3.98	0.50	0.50	34
RF	5280	6	2640	5.9	0.80	0.20	63
RD	2640	2.7	3960	3.9	0.39	0.61	44
QC	5280	7.4	2640	6.8	0.79	0.21	61
NB	2640	7.07	5280	15.02	0.35	0.65	47
JD	2640	1.7	2640	2.9	0.63	0.37	60
PB	5280	6.65	2640	7.3	0.81	0.19	66
JC	5280	11.4	5280	13.5	0.54	0.46	50
PA	5280	13.29	2640	15.53	0.82	0.18	67
MD	2640	6.6	2640	1.8	0.21	0.79	15
JB	5280	9.08	5280	16.35	0.64	0.36	61
OE	5280	7.4	2640	8.73	0.83	0.17	67
OD	5280	6.47	2640	7.3	0.82	0.18	66
MC	5280	7.9	5280	12.3	0.61	0.39	57
MF	5280	12.1	5280	10.87	0.47	0.53	42

Notes: Flow split is at the southwest corner of the drainage area.

Flow angle is measured counter-clockwise from the east-west street.

Delta Y is the elevation difference corresponding to the specified street length.

Special consideration is given to the flow splits that occur along the UPRR between 35<sup>th</sup> Avenue and 69<sup>th</sup> Avenue, which is a floodplain delineation study reach. There are a few areas where the top of rail elevations allow runoff to split and flow south where the main flow path is to the west along the railroad embankment. An initial analysis in the HEC-RAS River Analysis System determined that a sloping water surface would occur along the length of the low-lying rail. To account for this, the split flow option within the HEC-2 computer model is used to determine both the water surface elevation, and the flow diversion rating curve to be coded into the HEC-1 diversion sequence.

## H. Storage Routing

Ponding behind the RID Canal and the UPRR west of 69<sup>th</sup> Avenue is modeled using Modified Puls level-pool storage routing to determine peak discharge attenuation and ponding elevations. The HEC-1 input for storage routing requires a stage-storage-discharge relationship. The stage-storage relationships are developed using Eagle Point software with the three dimensional mapping files for each ponding area. The Eagle Point output consists of total cumulative storage volume for a range of elevations from the lowest elevation in the ponding area to a point above the overflow elevation.

The stage-discharge relationships are developed using a weir equation to analyze flow over the UPRR, RID canal, or approach roadways. Profiles for weir sections were obtained from field surveyed profiles with elevation shots taken at approximately 100 foot intervals. It is assumed that runoff flowing over the RID Canal will not be conveyed laterally in the canal but, due to the canal being full, will continue over the opposite canal bank and continue in the same direction. This assumption is discussed further in the Final Report and Technical Data Notebook for the *Floodplain Delineation of the Tolleson Area*, May 1999. The stage-storage-discharge data used for storage routing is contained in the **Appendix**.

The level-pool storage routing method utilized west of 69<sup>th</sup> Avenue is not appropriate for the area between 35<sup>th</sup> Avenue and 69<sup>th</sup> Avenue along the UPRR. The weir control sections for flow across the UPRR in this area are very long and are controlled by weir flow with a sloping water surface due to conveyance along the upstream face of the railroad. The level-pool storage routing is therefore replaced by *Modified Puls channel storage routing* between 35<sup>th</sup> and 69<sup>th</sup> Avenues. The actual storage volume within the routing reach is input into the HEC-1 model from the HEC-2/HEC-RAS floodplain delineation model. The channel storage vs. outflow rate data is presented in the **Appendix**.

## I. HEC-RAS Analysis

### Tolleson Area Floodplain Delineation Study

The preliminary HEC-1 modeling results from the Tolleson study indicated that the ponding areas typically did not extend upstream to the next adjacent ponding area. HEC-1 routing further indicated that during the 100-year event, significant peak flows pass between adjacent ponding areas

that would not be depicted by mapping only the ponding limits. Therefore, detailed mapping of the riverine and sheet flow between adjacent ponding areas was performed using the HEC-RAS model.

Initial HEC-RAS modeling results did not fully support the following assumptions made for the preliminary HEC-1 modeling at several of the ponding areas along the UPRR and RID:

- *Flow over the north-south drainage divides at the UPRR and RID ponding areas occurs as weir flow.* Flow over the north-south weir was found to be submerged, or controlled by backwater, at several of the ponding areas modeled by detailed methods.
- *Flow between adjacent ponding areas is contained by the UPRR and RID embankments.* HEC-RAS profiles indicated that overflow to the south occurs at several points between a few of the ponding areas modeled by detailed methods.

The HEC-1 modeling was coordinated with the HEC-RAS analysis in the following ways:

First, weir calculations were used to establish the stage-storage-discharge relationships for each ponding area to be modeled in the preliminary HEC-1 models. Then, the outflow and diversion discharge rates estimated from the preliminary HEC-1 level pool routing through ponding areas were used for the preliminary HEC-RAS models. Second, where the HEC-RAS modeling indicated that the flow over the north-south roadways was submerged, the weir relationships used in HEC-1 were replaced with rating curves based on HEC-RAS results. The HEC-1 model was then re-run to obtain revised discharge rates for use in the HEC-RAS models of the flow reaches between adjacent ponding areas. Where the HEC-RAS model indicated that flow over the weirs was not submerged, known water surface elevations based on the irregular weir calculations were entered into the HEC-RAS model. Third, where the HEC-RAS model indicated that the UPRR or RID could not contain flow along the embankment between the ponding areas (due to obstructions or lack of conveyance area), additional divert routines were added to the HEC-1 model to account for flow over the embankment between the ponding areas mapped by detailed methods. The floodplain delineation maps are presented in the *Tolleson Area Floodplain Delineation Study*.

### Durango ADMP Floodplain Delineation Study

Due to the sloping water surface at the weir control section along the UPRR between 35<sup>th</sup> and 69<sup>th</sup> Avenues, a different approach is utilized. As previously discussed, the actual storage volume from the HEC-RAS floodplain delineation model is input into HEC-1 for channel routing. Flow diversions over the weir control sections are determined from a HEC-2 split flow analysis model and input to the HEC-1 diversion sequence. The floodplain delineation maps are presented in the *Durango ADMP Floodplain Delineation Study*.

## **III. REVISIONS TO MODEL**

As previously stated, this model was originally developed in 1996 for the *Floodplain Delineation of the Tolleson Area* (Project FCD #95-26). However, for the purpose of this project, several revisions were required to bring the model up-to-date and to obtain a higher level of accuracy. These changes are itemized below by type of change. In general, the original HEC-1 data was preserved in the file by using an asterisk at the beginning of the data line to “remark-out” the code, thus causing the program to ignore it. Other tools that were employed during the editing process include the addition of comments, with dates and initials of the Engineer, where changes occurred as well as further notes at the end of the HEC-1 input file.

### A. HEC-1 Model Structure

There were several instances where changing the overall structure of the HEC-1 model became necessary. Many of these changes involved the addition of divert statements where the subbasin receiving the divert was above (before) the subbasin sending the divert. A fix to this generally involved “reversing” the divert table and/or reordering the code sequence.

Another model structure change was made along the BFC where two parallel flows were routed separately – for runoff accumulated on each side of the canal. For purposes of the floodplain delineation it was necessary to combine flows into one routing step simulating the total flow within the BFC. This was a simple fix that required the deletion of one channel routing step and the addition of a combine statement. In some cases, combine statements were further refined by breaking them into two separate statements. This was done to further define the flow coming from a particular direction for use in future channel design.

The area around the Holly Acres Levee (subbasins AB, AC, and AD) was also analyzed for ponding and weir flow over the main north-south roads. Based on topography from the aerial mapping, it was found that subbasin AD and the majority of AC will flow directly into the river and portions of AC will combine with AB and flow to the west over El Mirage Rd into AA. However, it is important to note that this area will be affected with the addition of the planned Tres Rios Levee project and will require further analysis at a later date.

Several subbasins required subdivision to account for new development or to obtain a higher degree of accuracy in the model. Subbasin JF was subdivided for greater accuracy into 4 subbasins (JF, JH, JG and JI). Subbasins which were subdivided due to development include JE and MD. JE was divided into JE1 and JE2 while MD was divided into MD, MH and MI. New land use and soil parameters, for these new subbasins, were extracted from GIS and incorporated into the DDMSW model.

#### B. Runoff/Unit Hydrograph

The study area is experiencing rapid growth from predominantly agricultural land toward an urbanized area. Consequently, the land use for this area needed to be updated. This was accomplished by using color aerial photos supplemented with field investigations. The land use type was determined from the digital aerial photos and digitized into AutoCAD. This data was then exported to the FCDMC's GIS system where the areas of each land use type were extracted on a subbasin basis.

These changes in land use also necessitated a change in how the unit hydrograph is developed. Previously, the entire watershed was modeled using the Agricultural S-graph. While the majority of the study area (42 square miles) is still modeled by using the Agricultural S-graph. The northeast portion of the study area (12 square miles) was changed to utilize the Phoenix Valley S-graph to more accurately depict the developed nature of the area.

### C. On-Site Retention

To accurately model the existing condition of the watershed, the storage due to on-site retention must be accounted for. This was accomplished in two phases. First, drainage reports were collected for developments either recently built or proposed for the area. Second, these reports were compared to the aerial photo to see if they had been built or were under construction as of the photo date of February 15, 2000. If so, then 80% of their retention volume is assumed to be effective and is accounted for through the use of a divert statement after the subbasin runoff computation. The developments incorporated into the model are listed in **Table 4** showing the HEC-1 subbasin modified and the retention volume modeled.

**Table 4** - On-Site Retention Volumes

SUBBASIN ID	Development Name	Retention Volume Per Report (af)	80% of Retention Volume (af)
JC	Marabella	6.4	5.1
OD	M.B.C.I.	2.5	2.0
KA	Coldwater Ranch	17.6	14.1
KA	Coldwater Springs*	n/a	-
PF	Knight Transportation	3.9	3.1
RF	Freightliner Arizona LTD	6.9	5.5
OE	Willamette Industries	5.3	4.2
LA	Cambridge Estates	31.3	25.0
LC	Fieldcrest/Sundance Ranch	16.3	13.0
JE	Rio del Rey	5.9	4.7
MD	Sundance Ranch	22.7	18.2
MI	Swift Transportation**	15.2	12.2
MG	Swift Transportation**	6.2	4.9

\* uses HEC-1 SA,SE card to model retention  
 \*\* Hand calculated based on Maricopa County criteria

Another area which has significant retention is the 91<sup>st</sup> Avenue Wastewater Treatment Plant (WWTP). The subbasins affected are EE, EC and FA. Additional subbasins WT1 and WT2 are also added to model this area more accurately. The WWTP retains 100% of all 100-year run-off generated by the site. Therefore, WT1 and WT2 were effectively taken out of the model. These areas are shown as non-contributing areas on **Figure 2**.

#### D. Hydrograph Diversions

Hydrograph diversions are widely used in this model to direct flow at key concentration points to other parts of the model. This is done with Divert statements. Some examples include; 1) flow splits at arterial street intersections, 2) diversions of UPRR and RID overflows, 3) retention being diverted out of the model, and 4) divert statements to route flow around code sequence for the sake of modeling clarity.

When a hydrograph is diverted into two hydrographs, such as occurs at a flow split location, the hydrograph that is carried forward in the next model step retains the total accumulated tributary area for purposes of aerial reduction of rainfall values. The diverted hydrograph is typically retrieved into the model sequence at some subsequent modeling point. The drainage area tributary to the diverted hydrograph is not retained when the hydrograph is retrieved and combined with a new hydrograph. As a result, the correct tributary area must be manually entered, when appropriate, to ensure proper application of the aerial reduction factors. The determination of appropriateness of a returned divert is based on the contributing flow amount versus the total combined flow. If the returned peak flow is greater than 25 percent of the total combined flow then the total is added. Locations in the model where the areas are manually set are denoted by an “@” symbol in front of the HEC-1 ID for concentration points (@CPRJ for example).

#### E. Hydrograph Routing

Modifications to hydrograph routing have been discussed in Section II as part of the discussion of channel routing, flow splits, and storage routing. The hydrograph routing changes are primarily improvements resulting from the more detailed HEC-RAS analysis associated with the new floodplain delineations. In summary, the routing changes affect the UPRR from 35<sup>th</sup> Avenue to 69<sup>th</sup> Avenue and the BFC from 91<sup>st</sup> Avenue to the Gila River.

## IV. RESULTS

The computed peak discharges for each subbasin and at all concentration points are summarized in the *HEC-1 Peak Flow Summary* contained in the **Appendix**. The summary shows the peak discharge for each hydrograph computation step for the 2-, 5-, 10-, 25-, 50-, and 100-year events for both the 6- and 24-hour storms. The subbasin routing diagram is shown on **Figure 2** with the drainage subareas for use in interpreting the summary data. The same exhibit is presented at a 2000 scale as **Exhibit 2** folded in the envelope at the back of the report. The HEC-1 input listing, schematic diagram, and output summary are also contained in the **Appendix**.

The 6- and 24-hour duration storms were run to determine the peak discharge from the “critical storm” at each concentration point within the watershed. The floodplain delineation is based on the higher peak discharge from the two durations. A summary table comparing the 6- and 24-hour 100-year peak discharge values for each computation step is contained in the **Appendix**.

### A. Comparison of the Results With Other Studies.

A comparison of the updated peak discharges generated in this study with the peak discharges from the Tolleson study is presented in the *HEC-1 Peak Flow Combine Summary* contained in the **Appendix** for combined flows at concentration points throughout the watershed.

### B. Conclusions

This hydrologic model was developed primarily for the purpose of delineating flood hazards along the RID Canal and the UPRR within the Durango ADMP area. As part of the current model update, the models use is expanded to delineate flood hazards along the BFC and to identify and evaluate alternative flood control measures to provide flood protection within the watershed. Detailed mapping along with sophisticated three-dimensional DTM computer terrain modeling techniques are used to develop the stage-storage relationships and HEC-RAS cross-sections. The mapping is supplemented with field surveys to establish profiles for weir calculations at overflow boundaries. The hydrograph routing is improved through the use of HEC-RAS water surface profile analysis and HEC-2 split flow analysis. Therefore it is felt that the model can be used to delineate riverine and ponding areas with reasonable confidence within the limitations of the methods employed.

## V. REFERENCES

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***Appendix A***  
***Soil Data***

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**Soil Data**

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Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBAA</b>	Central County	BS	0.002	0.4	0.39		
	Central County	VK	0.004	0.8	0.26		
	Central County	GGA	0.168	34.5	0.25		
	Central County	AA	0.012	2.5	0.26		
	Central County	GE	0.248	51.0	0.26		
	Central County	VH	0.039	8.0	0.27		
	Central County	MA	0.006	1.1	0.40		
	Central County	CF	0.008	1.7	0.50		
<b>SUBAB</b>	Central County	GGA	0.089	20.6	0.25		
	Central County	GU	0.002	0.5	0.04		
	Central County	AO	0.025	5.7	0.04		
	Central County	GT	0.071	16.4	0.04		
	Central County	GE	0.198	45.9	0.26		
	Central County	VH	0.033	7.6	0.27		
	Central County	ABA	0.014	3.3	0.38		
<b>SUBAC</b>	Central County	GT	0.069	15.1	0.04		
	Central County	GGA	0.195	42.7	0.25		
	Central County	GR	0.009	2.0	0.23		
	Central County	GE	0.049	10.8	0.26		
	Central County	AO	0.013	2.9	0.04		
	Central County	ABA	0.064	14.0	0.38		
	Central County	VH	0.057	12.6	0.27		
<b>SUBAD</b>	Central County	GT	0.055	12.6	0.04		
	Central County	ES	0.000		0.25		
	Central County	GGA	0.223	51.0	0.25		
	Central County	ABA	0.035	8.1	0.38		
	Central County	AA	0.014	3.2	0.26		
	Central County	GE	0.007	1.6	0.26		
	Central County	VH	0.083	19.0	0.27		
	Central County	BT	0.014	3.1	0.25		
	Central County	VK	0.006	1.3	0.26		
	Central County	CF	0.001	0.2	0.50		
<b>SUBBA</b>	Central County	GGA	0.195	56.5	0.25		
	Central County	GU	0.017	5.0	0.04		
	Central County	GH	0.055	15.9	0.24		
	Central County	AA	0.029	8.5	0.26		
	Central County	GE	0.049	14.1	0.26		
<b>SUBBB</b>	Central County	GU	0.061	25.0	0.04		
	Central County	GGA	0.086	35.3	0.25		
	Central County	GP	0.003	1.1	0.24		
	Central County	GT	0.064	26.2	0.04		
	Central County	GH	0.014	5.8	0.24		
	Central County	CN	0.010	4.1	0.01		
	Central County	AO	0.006	2.4	0.04		
<b>SUBBC</b>	Central County	RPE	0.037	5.8	0.29		
	Central County	VG	0.010	1.6	0.91		
	Central County	BT	0.005	0.8	0.25		
	Central County	GGA	0.047	7.5	0.25		
	Central County	AA	0.154	24.5	0.26		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBBC</b>	Central County		AN	0.023	3.7	0.05		
	Central County		GE	0.069	10.9	0.26		
	Central County		VK	0.090	14.3	0.26		
	Central County		RBA	0.024	3.8	0.26		
	Central County		BS	0.050	7.9	0.39		
	Central County		BR	0.014	2.2	1.05		
	Central County		VH	0.043	6.8	0.27		
	Central County		GU	0.057	9.0	0.04		
	Central County		CF	0.005	0.7	0.50		
	Central County		CB	0.002	0.4	0.40		
<b>SUBCA</b>	Central County		GF	0.016	1.6	0.24		
	Central County		AO	0.090	9.1	0.04		
	Central County		RPE	0.002	0.2	0.29		
	Central County		GB	0.051	5.2	0.04		
	Central County		GE	0.073	7.4	0.26		
	Central County		GC	0.198	20.1	0.01		
	Central County		CN	0.047	4.8	0.01		
	Central County		GGA	0.185	18.8	0.25		
	Central County		GU	0.271	27.6	0.04		
	Central County		AP	0.019	1.9	0.04		
	Central County		LD	0.008	0.8	0.25		
	Central County		ES	0.023	2.3	0.25		
	Central County		GH	0.001	0.1	0.24		
	Central County		GC	0.284	38.4	0.01		
	Central County		AO	0.009	1.2	0.04		
<b>SUBCB</b>	Central County		LE	0.077	10.4	0.04		
	Central County		GB	0.139	18.9	0.04		
	Central County		GU	0.041	5.5	0.04		
	Central County		GP	0.125	16.9	0.24		
	Central County		GGA	0.062	8.4	0.25		
	Central County		GT	0.002	0.3	0.04		
	Central County		LCA	0.080	8.2	0.25		
	Central County		GGA	0.139	14.2	0.25		
<b>SUBCC</b>	Central County		CP	0.065	6.6	0.40		
	Central County		GC	0.028	2.9	0.01		
	Central County		AO	0.059	6.0	0.04		
	Central County		GB	0.053	5.4	0.04		
	Central County		TA	0.061	6.2	0.25		
	Central County		LD	0.110	11.2	0.25		
	Central County		GE	0.011	1.2	0.26		
	Central County		LE	0.030	3.1	0.04		
	Central County		GP	0.156	15.9	0.24		
	Central County		GGB	0.041	4.2	0.26		
	Central County		GT	0.147	15.0	0.04		
	Central County		GT	0.093	28.3	0.04		
	Central County		LCA	0.147	45.0	0.25		
	Central County		LD	0.024	7.2	0.25		
<b>SUBDA</b>	Central County		GC	0.033	10.0	0.01		
	Central County		CP	0.012	3.5	0.40		
	Central County		GGA	0.017	5.2	0.25		
	Central County		AO	0.003	0.9	0.04		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBDC</b>	Central County		GE	0.068	8.2	0.26		
	Central County		ABA	0.043	5.1	0.38		
	Central County		LCA	0.241	29.1	0.25		
	Central County		ES	0.054	6.6	0.25		
	Central County		GGA	0.061	7.4	0.25		
	Central County		MO	0.007	0.8	0.39		
	Central County		VA	0.013	1.5	0.39		
	Central County		LB	0.019	2.3	0.40		
	Central County		CP	0.034	4.1	0.40		
	Central County		GGB	0.003	0.4	0.26		
	Central County		TU	0.019	2.2	0.25		
	Central County		LD	0.014	1.7	0.25		
	Central County		LE	0.087	10.5	0.04		
	Central County		GT	0.167	20.1	0.04		
<b>SUBDD</b>	Central County		GE	0.069	52.2	0.26		
	Central County		LCA	0.022	16.4	0.25		
	Central County		TA	0.007	5.4	0.25		
	Central County		ABA	0.007	5.0	0.38		
	Central County		GGA	0.014	10.7	0.25		
	Central County		CP	0.014	10.3	0.40		
<b>SUBEA</b>	Central County		LCA	0.122	9.3	0.25		
	Central County		TU	0.243	18.4	0.25		
	Central County		ES	0.181	13.7	0.25		
	Central County		GGA	0.204	15.4	0.25		
	Central County		LB	0.094	7.1	0.40		
	Central County		GE	0.055	4.2	0.26		
	Central County		ABA	0.018	1.3	0.38		
	Central County		VA	0.050	3.8	0.39		
	Central County		MP	0.067	5.1	0.25		
	Central County		MO	0.013	1.0	0.39		
	Central County		TW	0.011	0.8	0.05		
	Central County		MR	0.037	2.8	0.05		
	Central County		CP	0.008	0.6	0.40		
	Central County		TT	0.015	1.1	0.04		
	Central County		TA	0.029	2.2	0.25		
	Central County		GR	0.027	2.1	0.23		
	Central County		LE	0.005	0.4	0.04		
	Central County		AO	0.031	2.4	0.04		
	Central County		GT	0.098	7.4	0.04		
	Central County		GC	0.011	0.8	0.01		
	Central County		TC	0.001		0.40		
	Central County		VH	0.001	0.1	0.27		
<b>SUBEB</b>	Central County		TU	0.082	59.2	0.25		
	Central County		MR	0.012	8.4	0.05		
	Central County		TW	0.045	32.4	0.05		
<b>SUBED</b>	Central County		MP	0.066	13.7	0.25		
	Central County		TU	0.272	56.4	0.25		
	Central County		TW	0.120	24.9	0.05		
	Central County		LB	0.013	2.6	0.40		
	Central County		LCA	0.012	2.4	0.25		

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Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBFB</b>	Central County	LCA	0.073	11.2	0.25		
	Central County	MP	0.000		0.25		
	Central County	TU	0.030	4.5	0.25		
	Central County	TW	0.024	3.6	0.05		
	Central County	GT	0.159	24.3	0.04		
	Central County	AO	0.091	14.0	0.04		
	Central County	GGA	0.164	25.1	0.25		
	Central County	ES	0.017	2.6	0.25		
	Central County	GR	0.034	5.1	0.23		
	Central County	MA	0.006	0.9	0.40		
	Central County	GE	0.015	2.3	0.26		
	Central County	VH	0.019	2.9	0.27		
	Central County	BR	0.016	2.4	1.05		
	Central County	VG	0.002	0.3	0.91		
	Central County	AA	0.005	0.8	0.26		
<b>SUBFC</b>	Central County	AO	0.126	35.3	0.04		
	Central County	GT	0.034	9.5	0.04		
	Central County	CN	0.034	9.5	0.01		
	Central County	GGA	0.106	29.8	0.25		
	Central County	GV	0.000	0.1	0.01		
	Central County	GR	0.009	2.5	0.23		
	Central County	GE	0.015	4.1	0.26		
	Central County	AE	0.001	0.3	0.39		
	Central County	ABA	0.015	4.1	0.38		
	Central County	VH	0.016	4.6	0.27		
	Central County	CF	0.000	0.1	0.50		
	Central County	BR	0.000	0.1	1.05		
	Central County						
<b>SUBGA</b>	Central County	GGA	0.002	1.3	0.25		
	Central County	RPE	0.133	95.8	0.29		
	Central County	LCB	0.004	2.9	0.25		
<b>SUBGB</b>	Central County	RPE	0.196	88.5	0.29		
	Central County	LCB	0.012	5.3	0.25		
	Central County	GF	0.009	4.0	0.24		
	Central County	GE	0.005	2.3	0.26		
<b>SUBGC</b>	Central County	GGB	0.029	13.6	0.26		
	Central County	GGA	0.011	5.1	0.25		
	Central County	RPE	0.071	33.0	0.29		
	Central County	LCB	0.096	44.6	0.25		
	Central County	ADB	0.000	0.1	0.40		
	Central County	GF	0.006	3.0	0.24		
	Central County	AO	0.001	0.6	0.04		
<b>SUBGD</b>	Central County	LCA	0.184	22.0	0.25		
	Central County	GGA	0.143	17.1	0.25		
	Central County	GGB	0.003	0.3	0.26		
	Central County	LCB	0.046	5.5	0.25		
	Central County	LB	0.024	2.9	0.40		
	Central County	PA	0.004	0.4	0.40		
	Central County	ADB	0.034	4.1	0.40		
	Central County	RPE	0.004	0.4	0.29		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBGD</b>	Central County	GH	0.038	4.6	0.24			
	Central County	AO	0.014	1.6	0.04			
	Central County	GF	0.010	1.1	0.24			
	Central County	TA	0.018	2.1	0.25			
	Central County	GB	0.108	12.9	0.04			
	Central County	LD	0.028	3.4	0.25			
	Central County	GC	0.180	21.4	0.01			
<b>SUBHA</b>	Central County	LCA	0.105	69.8	0.25			
	Central County	RBA	0.002	1.1	0.26			
	Central County	TU	0.020	13.4	0.25			
	Central County	TA	0.015	9.9	0.25			
	Central County	LB	0.006	4.3	0.40			
	Central County	LD	0.002	1.6	0.25			
<b>SUBHB</b>	Central County	LCA	0.245	71.4	0.25			
	Central County	LB	0.011	3.1	0.40			
	Central County	MP	0.061	17.9	0.25			
	Central County	GGA	0.011	3.1	0.25			
	Central County	ES	0.001	0.2	0.25			
	Central County	RBA	0.012	3.4	0.26			
	Central County	GT	0.003	0.9	0.04			
<b>SUBIA</b>	Central County	LCA	0.068	22.2	0.25			
	Central County	ES	0.042	13.6	0.25			
	Central County	MP	0.106	34.3	0.25			
	Central County	GT	0.084	27.2	0.04			
	Central County	TU	0.008	2.7	0.25			
<b>SUBIB</b>	Central County	MR	0.080	16.7	0.05			
	Central County	TW	0.305	63.8	0.05			
	Central County	GT	0.027	5.7	0.04			
	Central County	LCA	0.015	3.2	0.25			
	Central County	TA	0.051	10.6	0.25			
<b>SUBIC</b>	Central County	TW	0.042	8.1	0.05			
	Central County	TU	0.147	28.5	0.25			
	Central County	TA	0.058	11.2	0.25			
	Central County	GT	0.023	4.5	0.04			
	Central County	LCA	0.086	16.7	0.25			
	Central County	ES	0.062	12.0	0.25			
	Central County	GE	0.089	17.3	0.26			
	Central County	GGA	0.009	1.7	0.25			
<b>SUBID</b>	Central County	TW	0.181	32.1	0.05			
	Central County	TU	0.178	31.7	0.25			
	Central County	GGA	0.100	17.7	0.25			
	Central County	TA	0.015	2.7	0.25			
	Central County	LCA	0.038	6.7	0.25			
	Central County	ES	0.047	8.4	0.25			
	Central County	GE	0.004	0.7	0.26			
<b>SUBIE</b>	Central County	MR	0.043	14.3	0.05			
	Central County	TW	0.259	85.7	0.05			
<b>SUBJB</b>	Central County	MP	0.242	24.5	0.25			

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Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBJB</b>	Central County	TU	0.291	29.4	0.25		
	Central County	MR	0.100	10.2	0.05		
	Central County	TW	0.126	12.7	0.05		
	Central County	LCA	0.085	8.6	0.25		
	Central County	TA	0.054	5.4	0.25		
	Central County	GGA	0.021	2.1	0.25		
	Central County	LB	0.038	3.8	0.40		
	Central County	ES	0.015	1.6	0.25		
	Central County	GE	0.007	0.7	0.26		
	Central County	LE	0.010	1.0	0.04		
<b>SUBJC</b>	Central County	MR	0.328	33.2	0.05		
	Central County	TW	0.059	6.0	0.05		
	Central County	TU	0.114	11.6	0.25		
	Central County	LE	0.010	1.0	0.04		
	Central County	VF	0.010	1.0	0.01		
	Central County	LCA	0.139	14.1	0.25		
	Central County	LB	0.023	2.3	0.40		
	Central County	MP	0.069	7.0	0.25		
	Central County	TT	0.064	6.5	0.04		
	Central County	ES	0.063	6.4	0.25		
	Central County	AO	0.056	5.7	0.04		
	Central County	GGA	0.029	3.0	0.25		
	Central County	GT	0.023	2.4	0.04		
<b>SUBJD</b>	Central County	TU	0.032	6.3	0.25		
	Central County	GGA	0.118	23.3	0.25		
	Central County	GT	0.070	13.9	0.04		
	Central County	LCA	0.015	2.9	0.25		
	Central County	MR	0.021	4.2	0.05		
	Central County	AO	0.182	36.1	0.04		
	Central County	TT	0.025	5.0	0.04		
	Central County	GR	0.021	4.1	0.23		
	Central County	GV	0.013	2.5	0.01		
	Central County	GC	0.009	1.7	0.01		
<b>SUBJF</b>	Central County	GV	0.002	0.3	0.01		
	Central County	MR	0.123	24.5	0.05		
	Central County	GGA	0.178	35.6	0.25		
	Central County	AA	0.001	0.2	0.26		
	Central County	AO	0.040	8.0	0.04		
	Central County	TT	0.037	7.3	0.04		
	Central County	ES	0.006	1.2	0.25		
	Central County	GT	0.114	22.8	0.04		
<b>SUBJG</b>	Central County	GGA	0.255	28.3	0.25		
	Central County	GT	0.075	8.3	0.04		
	Central County	TT	0.068	7.5	0.04		
	Central County	AO	0.079	8.8	0.04		
	Central County	GV	0.136	15.1	0.01		
	Central County	TU	0.011	1.3	0.25		
	Central County	LCA	0.007	0.7	0.25		
	Central County	ES	0.046	5.1	0.25		
	Central County	AA	0.004	0.5	0.26		
	Central County	GC	0.093	10.3	0.01		

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Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBJG</b>	Central County	CN	0.042	4.6	0.01		
	Central County	GE	0.080	8.8	0.26		
	Central County	VK	0.005	0.5	0.26		
<b>SUBJH</b>	Central County	GV	0.031	6.0	0.01		
	Central County	AO	0.046	8.9	0.04		
	Central County	TT	0.036	7.0	0.04		
	Central County	GC	0.160	30.9	0.01		
	Central County	MS	0.105	20.3	0.01		
	Central County	MR	0.028	5.5	0.05		
	Central County	TW	0.045	8.8	0.05		
	Central County	GT	0.041	7.9	0.04		
	Central County	GGA	0.014	2.6	0.25		
	Central County	MP	0.010	1.9	0.25		
<b>SUBJI</b>	Central County	LCA	0.001	0.2	0.25		
	Central County	GC	0.090	29.1	0.01		
	Central County	AO	0.026	8.5	0.04		
	Central County	GV	0.097	31.4	0.01		
	Central County	GT	0.033	10.7	0.04		
	Central County	CN	0.021	6.7	0.01		
	Central County	GGA	0.013	4.1	0.25		
	Central County	GE	0.024	7.8	0.26		
	Central County	VH	0.004	1.2	0.27		
<b>SUBKA</b>	Central County	VK	0.002	0.6	0.26		
	Central County	AA	0.090	6.7	0.26		
	Central County	GGA	0.448	33.3	0.25		
	Central County	TW	0.019	1.4	0.05		
	Central County	LCA	0.327	24.3	0.25		
	Central County	MP	0.078	5.8	0.25		
	Central County	ES	0.064	4.7	0.25		
	Central County	RBA	0.032	2.4	0.26		
	Central County	GXA	0.003	0.2	0.23		
	Central County	GT	0.010	0.7	0.04		
	Central County	TA	0.007	0.5	0.25		
	Central County	VH	0.110	8.2	0.27		
	Central County	VG	0.031	2.3	0.91		
	Central County	LCB	0.029	2.2	0.25		
	Central County	BR	0.001		1.05		
	Central County	TU	0.084	6.2	0.25		
<b>SUBKB</b>	Central County	BS	0.006	0.4	0.39		
	Central County	MA	0.004	0.3	0.40		
	Central County	AO	0.003	0.2	0.04		
	Central County	AO	0.053	12.7	0.04		
	Central County	GGA	0.100	23.8	0.25		
	Central County	MA	0.070	16.6	0.40		
	Central County	VH	0.068	16.1	0.27		
	Central County	LCA	0.028	6.6	0.25		
	Central County	BS	0.028	6.6	0.39		
	Central County	GXB	0.010	2.3	0.24		
<b>SUBKC</b>	Central County	VA	0.017	4.1	0.39		
	Central County	LB	0.005	1.2	0.40		
	Central County	CB	0.001	0.1	0.40		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBKB</b>	Central County		GGB	0.011	2.5	0.26		
	Central County		RPE	0.030	7.2	0.29		
<b>SUBKC</b>	Central County		LCA	0.154	58.6	0.25		
	Central County		LB	0.050	18.9	0.40		
	Central County		PEA	0.006	2.4	0.37		
	Central County		GGA	0.052	19.6	0.25		
	Central County		GGB	0.001	0.5	0.26		
<b>SUBKD</b>	Central County		LCA	0.604	86.0	0.25		
	Central County		TW	0.025	3.6	0.05		
	Central County		MP	0.073	10.3	0.25		
	Central County		TU	0.001	0.1	0.25		
<b>SUBLA</b>	Central County		LCA	0.327	63.6	0.25		
	Central County		GGA	0.137	26.6	0.25		
	Central County		TU	0.001	0.1	0.25		
	Central County		VA	0.028	5.3	0.39		
	Central County		LB	0.023	4.4	0.40		
<b>SUBLB</b>	Central County		LCA	0.182	73.3	0.25		
	Central County		LB	0.066	26.7	0.40		
<b>SUBLC</b>	Central County		LCA	0.119	99.6	0.25		
	Central County		LB	0.001	0.4	0.40		
<b>SUBLD</b>	Central County		MP	0.142	50.9	0.25		
	Central County		LCA	0.136	49.1	0.25		
<b>SUBLE</b>	Central County		MP	0.054	21.6	0.25		
	Central County		LCA	0.196	78.4	0.25		
<b>SUBMA</b>	Central County		LCA	0.112	45.3	0.25		
	Central County		LB	0.065	26.4	0.40		
	Central County		MP	0.047	19.0	0.25		
	Central County		MO	0.019	7.7	0.39		
	Central County		GGA	0.004	1.6	0.25		
<b>SUBMB</b>	Central County		TT	0.076	7.7	0.04		
	Central County		MR	0.672	67.5	0.05		
	Central County		LE	0.015	1.5	0.04		
	Central County		MP	0.027	2.7	0.25		
	Central County		LCA	0.066	6.6	0.25		
	Central County		TW	0.097	9.8	0.05		
	Central County		RBB	0.014	1.4	0.25		
	Central County		GT	0.029	2.9	0.04		
<b>SUBMC</b>	Central County		GT	0.103	10.3	0.04		
	Central County		TT	0.315	31.5	0.04		
	Central County		MR	0.351	35.2	0.05		
	Central County		TU	0.019	1.9	0.25		
	Central County		MP	0.027	2.7	0.25		
	Central County		TW	0.184	18.4	0.05		
<b>SUBMD</b>	Central County		MR	0.137	54.0	0.05		
	Central County		MP	0.057	22.3	0.25		
	Central County		TU	0.007	2.6	0.25		

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Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBMD</b>	Central County	TW	0.054	21.0	0.05		
<b>SUBME</b>	Central County	LCA	0.236	72.3	0.25		
	Central County	MP	0.041	12.6	0.25		
	Central County	LB	0.046	14.1	0.40		
	Central County	GT	0.003	0.9	0.04		
	Central County	ES	0.001	0.2	0.25		
<b>SUBMF</b>	Central County	TT	0.028	2.9	0.04		
	Central County	MR	0.608	62.6	0.05		
	Central County	ES	0.001	0.1	0.25		
	Central County	MP	0.085	8.7	0.25		
	Central County	GT	0.000		0.04		
	Central County	VF	0.108	11.1	0.01		
	Central County	TU	0.106	10.9	0.25		
	Central County	TW	0.035	3.6	0.05		
<b>SUBMG</b>	Central County	LCA	0.001	1.7	0.25		
	Central County	TU	0.022	26.9	0.25		
	Central County	MP	0.009	10.7	0.25		
	Central County	MR	0.049	60.7	0.05		
<b>SUBMH</b>	Central County	TT	0.098	40.9	0.04		
	Central County	MR	0.111	46.6	0.05		
	Central County	ES	0.000		0.25		
	Central County	TW	0.017	7.2	0.05		
	Central County	TU	0.009	3.8	0.25		
	Central County	MP	0.004	1.5	0.25		
<b>SUBMI</b>	Central County	MR	0.335	81.9	0.05		
	Central County	TT	0.007	1.7	0.04		
	Central County	TW	0.010	2.3	0.05		
	Central County	TU	0.025	6.1	0.25		
	Central County	MP	0.029	7.1	0.25		
	Central County	LCA	0.004	0.9	0.25		
<b>SUBNA</b>	Central County	MR	0.430	44.0	0.05		
	Central County	MP	0.053	5.4	0.25		
	Central County	TT	0.046	4.7	0.04		
	Central County	GT	0.039	4.0	0.04		
	Central County	GGA	0.021	2.1	0.25		
	Central County	VF	0.023	2.3	0.01		
	Central County	TW	0.188	19.2	0.05		
	Central County	TU	0.130	13.3	0.25		
	Central County	LCA	0.005	0.5	0.25		
	Central County	LB	0.032	3.3	0.40		
	Central County	LE	0.011	1.1	0.04		
<b>SUBNB</b>	Central County	MR	0.148	33.4	0.05		
	Central County	GGA	0.057	12.8	0.25		
	Central County	GT	0.063	14.1	0.04		
	Central County	TU	0.105	23.8	0.25		
	Central County	MP	0.025	5.7	0.25		
	Central County	MO	0.015	3.3	0.39		
	Central County	ES	0.022	5.0	0.25		
	Central County	TW	0.004	0.9	0.05		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBNB</b>	Central County		ABA	0.005	1.0	0.38		
<b>SUBNC</b>	Central County		GT	0.029	9.5	0.04		
	Central County		GGA	0.255	83.3	0.25		
	Central County		AA	0.002	0.5	0.26		
	Central County		BT	0.014	4.6	0.25		
	Central County		AO	0.006	2.0	0.04		
<b>SUBOB</b>	Central County		LE	0.018	4.0	0.04		
	Central County		LCA	0.346	77.9	0.25		
	Central County		MR	0.013	3.0	0.05		
	Central County		MP	0.067	15.1	0.25		
<b>SUBOC</b>	Central County		TT	0.135	43.6	0.04		
	Central County		GT	0.102	32.8	0.04		
	Central County		LE	0.012	3.8	0.04		
	Central County		MR	0.053	17.0	0.05		
	Central County		MP	0.008	2.7	0.25		
	Central County		LCA	0.000		0.25		
<b>SUBOD</b>	Central County		GT	0.360	70.8	0.04		
	Central County		TT	0.116	22.9	0.04		
	Central County		VF	0.032	6.3	0.01		
<b>SUBOE</b>	Central County		GGA	0.238	50.7	0.25		
	Central County		AO	0.011	2.3	0.04		
	Central County		GT	0.095	20.3	0.04		
	Central County		TT	0.042	9.0	0.04		
	Central County		ES	0.067	14.3	0.25		
	Central County		MR	0.009	1.9	0.05		
	Central County		MP	0.007	1.5	0.25		
	Central County		VF	0.001	0.1	0.01		
<b>SUBOF</b>	Central County		TT	0.058	23.5	0.04		
	Central County		LE	0.070	28.4	0.04		
	Central County		GT	0.075	30.5	0.04		
	Central County		LCA	0.014	5.5	0.25		
	Central County		MR	0.030	12.0	0.05		
<b>SUBOG</b>	Central County		GT	0.299	60.9	0.04		
	Central County		VF	0.018	3.7	0.01		
	Central County		TT	0.157	32.0	0.04		
	Central County		LCA	0.017	3.5	0.25		
<b>SUBPA</b>	Central County		GT	0.113	23.8	0.04		
	Central County		GGA	0.114	23.9	0.25		
	Central County		TT	0.116	24.4	0.04		
	Central County		GR	0.065	13.6	0.23		
	Central County		ES	0.035	7.3	0.25		
	Central County		MR	0.033	7.0	0.05		
<b>SUBPB</b>	Central County		TT	0.184	42.0	0.04		
	Central County		GT	0.012	2.8	0.04		
	Central County		MR	0.185	42.1	0.05		
	Central County		VF	0.014	3.3	0.01		
	Central County		MP	0.043	9.8	0.25		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBPC</b>	Central County		GT	0.168	56.0	0.04		
	Central County		MR	0.080	26.8	0.05		
	Central County		TT	0.033	10.9	0.04		
	Central County		GGA	0.019	6.3	0.25		
<b>SUBPD</b>	Central County		GT	0.289	65.3	0.04		
	Central County		TT	0.012	2.7	0.04		
	Central County		GGA	0.137	30.9	0.25		
	Central County		MR	0.000		0.05		
	Central County		AA	0.004	1.0	0.26		
<b>SUBPE</b>	Central County		GGA	0.331	65.8	0.25		
	Central County		GT	0.116	23.0	0.04		
	Central County		AO	0.018	3.5	0.04		
	Central County		MA	0.010	1.9	0.40		
	Central County		TT	0.023	4.5	0.04		
	Central County		AA	0.004	0.8	0.26		
	Central County		ES	0.002	0.5	0.25		
<b>SUBPF</b>	Central County		GGA	0.092	18.3	0.25		
	Central County		GT	0.152	30.2	0.04		
	Central County		GR	0.075	14.9	0.23		
	Central County		ES	0.037	7.4	0.25		
	Central County		AA	0.009	1.8	0.26		
	Central County		AO	0.004	0.7	0.04		
	Central County		GV	0.006	1.2	0.01		
	Central County		TT	0.122	24.2	0.04		
	Central County		MR	0.006	1.2	0.05		
<b>SUBQA</b>	Central County		GT	0.223	46.0	0.04		
	Central County		AO	0.055	11.4	0.04		
	Central County		TT	0.048	9.8	0.04		
	Central County		GR	0.000	0.1	0.23		
	Central County		ES	0.014	2.9	0.25		
	Central County		MR	0.026	5.4	0.05		
	Central County		GV	0.028	5.7	0.01		
	Central County		MS	0.029	5.9	0.01		
	Central County		LE	0.035	7.3	0.04		
	Central County		GC	0.026	5.4	0.01		
<b>SUBQB</b>	Central County		MS	0.354	70.2	0.01		
	Central County		MR	0.080	15.9	0.05		
	Central County		GT	0.029	5.7	0.04		
	Central County		TU	0.001	0.2	0.25		
	Central County		ES	0.016	3.2	0.25		
	Central County		TT	0.005	1.1	0.04		
	Central County		GC	0.019	3.7	0.01		
<b>SUBQC</b>	Central County		MR	0.018	2.9	0.05		
	Central County		MS	0.090	14.9	0.01		
	Central County		LE	0.043	7.1	0.04		
	Central County		LCA	0.031	5.1	0.25		
	Central County		GC	0.074	12.2	0.01		
	Central County		CN	0.049	8.1	0.01		
	Central County		TU	0.014	2.4	0.25		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBQC</b>	Central County		TW	0.004	0.7	0.05		
	Central County		GT	0.154	25.5	0.04		
	Central County		GV	0.045	7.4	0.01		
	Central County		TT	0.003	0.6	0.04		
	Central County		AO	0.027	4.4	0.04		
	Central County		GGA	0.047	7.7	0.25		
	Central County		VK	0.005	0.9	0.26		
<b>SUBQD</b>	Central County		GV	0.028	11.0	0.01		
	Central County		MS	0.158	63.4	0.01		
	Central County		GC	0.034	13.8	0.01		
	Central County		GT	0.003	1.0	0.04		
	Central County		MR	0.024	9.8	0.05		
	Central County		LE	0.002	1.0	0.04		
<b>SUBQE</b>	Central County		GT	0.367	40.2	0.04		
	Central County		GV	0.122	13.3	0.01		
	Central County		GGA	0.063	6.8	0.25		
	Central County		TT	0.054	5.9	0.04		
	Central County		GC	0.062	6.8	0.01		
	Central County		MS	0.105	11.6	0.01		
	Central County		AO	0.066	7.3	0.04		
	Central County		LE	0.022	2.4	0.04		
	Central County		MR	0.009	1.0	0.05		
	Central County		CN	0.040	4.4	0.01		
	Central County		LCA	0.003	0.3	0.25		
	Central County		GGA	0.137	61.6	0.25		
<b>SUBRA</b>	Central County		AA	0.047	21.0	0.26		
	Central County		GE	0.039	17.5	0.26		
	Central County		GT	0.084	15.2	0.04		
<b>SUBRB</b>	Central County		LCA	0.020	3.7	0.25		
	Central County		GGA	0.188	34.3	0.25		
	Central County		ABA	0.041	7.4	0.38		
	Central County		LCB	0.006	1.1	0.25		
	Central County		ABB	0.017	3.1	0.39		
	Central County		GE	0.115	20.9	0.26		
	Central County		MR	0.029	5.3	0.05		
	Central County		BS	0.006	1.0	0.39		
	Central County		ES	0.018	3.4	0.25		
	Central County		MP	0.019	3.4	0.25		
	Central County		RBA	0.006	1.1	0.26		
	Central County		TW	0.000		0.05		
	Central County		LE	0.191	27.9	0.04		
<b>SUBRC</b>	Central County		LCA	0.451	66.1	0.25		
	Central County		MR	0.035	5.2	0.05		
	Central County		TW	0.005	0.7	0.05		
	Central County		LE	0.061	16.7	0.04		
<b>SUBRD</b>	Central County		TW	0.022	6.0	0.05		
	Central County		LCA	0.283	77.3	0.25		
	Central County		LE	0.190	50.9	0.04		
<b>SUBRE</b>	Central County		MP	0.022	5.9	0.25		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBRE</b>	Central County		LCA	0.147	39.4	0.25		
	Central County		TT	0.015	3.9	0.04		
<b>SUBRF</b>	Central County		GT	0.512	81.5	0.04		
	Central County		LE	0.023	3.7	0.04		
	Central County		VF	0.025	4.0	0.01		
	Central County		TT	0.062	9.8	0.04		
	Central County		LCA	0.007	1.1	0.25		
<b>SUBRG</b>	Central County		GT	0.071	63.8	0.04		
	Central County		LE	0.039	34.6	0.04		
	Central County		LCA	0.002	1.6	0.25		
<b>SUBRH</b>	Central County		GT	0.216	88.2	0.04		
	Central County		AO	0.000		0.04		
	Central County		GGA	0.029	11.7	0.25		
<b>SUBRI</b>	Central County		AO	0.113	48.9	0.04		
	Central County		GT	0.028	11.9	0.04		
	Central County		GGA	0.091	39.3	0.25		
<b>SUBRJ</b>	Central County		GGA	0.068	42.1	0.25		
	Central County		GT	0.083	50.8	0.04		
	Central County		GE	0.012	7.1	0.26		
<b>SUBSA</b>	Central County		GT	0.415	98.8	0.04		
	Central County		AO	0.005	1.2	0.04		
<b>SUBSB</b>	Central County		GT	0.142	84.6	0.04		
	Central County		AO	0.020	12.2	0.04		
	Central County		GGA	0.005	3.2	0.25		
<b>SUBSC</b>	Central County		GGA	0.425	93.8	0.25		
	Central County		AO	0.018	4.0	0.04		
	Central County		AA	0.010	2.2	0.26		
<b>SUBSD</b>	Central County		GGA	0.097	57.5	0.25		
	Central County		AO	0.048	28.3	0.04		
	Central County		GT	0.024	14.2	0.04		
<b>SUBSE</b>	Central County		GGA	0.118	93.9	0.25		
	Central County		GE	0.008	6.1	0.26		
<b>SUBSF</b>	Central County		GT	0.165	43.9	0.04		
	Central County		TT	0.173	46.1	0.04		
	Central County		MR	0.030	7.9	0.05		
	Central County		TG	0.008	2.1	0.04		
<b>SUBSG</b>	Central County		GGA	0.016	12.1	0.25		
	Central County		AO	0.041	30.4	0.04		
	Central County		GT	0.078	57.5	0.04		
<b>SUBSH</b>	Central County		GT	0.103	100.0	0.04		
<b>SUBTA</b>	Central County		GGA	0.106	43.9	0.25		
	Central County		AA	0.012	5.1	0.26		
	Central County		GT	0.080	33.1	0.04		
	Central County		AO	0.043	18.0	0.04		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBTB</b>	Central County		MR	0.043	4.8	0.05		
	Central County		GT	0.583	65.7	0.04		
	Central County		GGA	0.045	5.0	0.25		
	Central County		ES	0.032	3.6	0.25		
	Central County		TT	0.185	20.8	0.04		
<b>SUBUA</b>	Central County		MR	0.108	19.2	0.05		
	Central County		GT	0.317	56.6	0.04		
	Central County		TT	0.079	14.1	0.04		
	Central County		MS	0.021	3.8	0.01		
	Central County		RBA	0.014	2.4	0.26		
	Central County		GGA	0.022	3.8	0.25		
<b>SUBUB</b>	Central County		TT	0.012	9.6	0.04		
	Central County		GT	0.035	27.7	0.04		
	Central County		MR	0.079	62.7	0.05		
<b>SUBUC</b>	Central County		GT	0.428	88.5	0.04		
	Central County		GGA	0.026	5.3	0.25		
	Central County		MR	0.028	5.9	0.05		
	Central County		TT	0.002	0.4	0.04		
<b>SUBUD</b>	Central County		GT	0.679	89.4	0.04		
	Central County		AO	0.080	10.6	0.04		
<b>SUBUE</b>	Central County		GT	0.048	76.4	0.04		
	Central County		VF	0.015	23.6	0.01		
<b>SUBVA</b>	Central County		GT	0.345	70.0	0.04		
	Central County		AO	0.041	8.2	0.04		
	Central County		GGA	0.107	21.8	0.25		
<b>SUBVB</b>	Central County		AO	0.169	23.5	0.04		
	Central County		GT	0.507	70.4	0.04		
	Central County		TT	0.010	1.4	0.04		
	Central County		GGA	0.009	1.2	0.25		
	Central County		AA	0.012	1.7	0.26		
	Central County		MR	0.005	0.7	0.05		
	Central County		GV	0.007	1.0	0.01		
<b>SUBVC</b>	Central County		MR	0.073	15.0	0.05		
	Central County		GGA	0.058	11.8	0.25		
	Central County		GT	0.153	31.2	0.04		
	Central County		GV	0.005	1.0	0.01		
	Central County		AO	0.101	20.7	0.04		
	Central County		AA	0.001	0.2	0.26		
	Central County		TU	0.039	8.1	0.25		
	Central County		TT	0.048	9.8	0.04		
	Central County		MS	0.011	2.3	0.01		
<b>SUBVD</b>	Central County		GV	0.109	15.6	0.01		
	Central County		GT	0.320	45.9	0.04		
	Central County		AO	0.020	2.8	0.04		
	Central County		MR	0.126	18.0	0.05		
	Central County		MS	0.045	6.4	0.01		
	Central County		GGA	0.046	6.6	0.25		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBVD</b>	Central County		TT	0.025	3.6	0.04		
	Central County		MP	0.007	1.0	0.25		
<b>SUBWA</b>	Central County		MR	0.086	17.6	0.05		
	Central County		GT	0.254	51.6	0.04		
	Central County		MP	0.007	1.4	0.25		
	Central County		GV	0.073	14.7	0.01		
	Central County		GC	0.053	10.8	0.01		
	Central County		TT	0.014	2.9	0.04		
	Central County		MS	0.005	1.0	0.01		
<b>SUBWB</b>	Central County		GT	0.655	98.2	0.04		
	Central County		GV	0.010	1.5	0.01		
	Central County		GGA	0.002	0.3	0.25		
<b>SUBWC</b>	Central County		GT	0.452	92.8	0.04		
	Central County		GB	0.025	5.1	0.04		
	Central County		GV	0.007	1.4	0.01		
	Central County		MS	0.001	0.2	0.01		
	Central County		GGA	0.003	0.6	0.25		
<b>SUBWD</b>	Central County		AO	0.074	18.9	0.04		
	Central County		GGA	0.192	48.8	0.25		
	Central County		GT	0.127	32.3	0.04		
<b>SUBXA</b>	Central County		AO	0.099	40.2	0.04		
	Central County		GT	0.147	59.3	0.04		
	Central County		MS	0.001	0.5	0.01		
<b>SUBEC</b>	Central County		VH	0.001	3.4	0.27		
	Central County		GGA	0.038	91.1	0.25		
	Central County		GR	0.001	1.9	0.23		
	Central County		CB	0.000	0.2	0.40		
	Central County		CF	0.001	3.4	0.50		
<b>SUBEE</b>	Central County		MP	0.185	19.3	0.25		
	Central County		TA	0.030	3.1	0.25		
	Central County		TU	0.198	20.7	0.25		
	Central County		LB	0.234	24.5	0.40		
	Central County		ES	0.053	5.5	0.25		
	Central County		LCA	0.133	13.9	0.25		
	Central County		GGA	0.021	2.2	0.25		
	Central County		GE	0.001	0.1	0.26		
	Central County		MR	0.078	8.1	0.05		
	Central County		GT	0.006	0.6	0.04		
	Central County		GR	0.016	1.7	0.23		
	Central County		CN	0.003	0.3	0.01		
	Central County		AN	0.001	0.1	0.05		
<b>SUBFA</b>	Central County		GGA	0.205	26.8	0.25		
	Central County		MR	0.056	7.4	0.05		
	Central County		ES	0.081	10.6	0.25		
	Central County		TW	0.050	6.5	0.05		
	Central County		LE	0.016	2.1	0.04		
	Central County		TU	0.094	12.3	0.25		
	Central County		AA	0.024	3.1	0.26		

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	Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
<b>SUBFA</b>	Central County		MP	0.016	2.1	0.25		
	Central County		GE	0.047	6.1	0.26		
	Central County		LCA	0.123	16.1	0.25		
	Central County		GT	0.003	0.4	0.04		
	Central County		AN	0.002	0.3	0.05		
	Central County		VA	0.020	2.6	0.39		
	Central County		VH	0.009	1.2	0.27		
	Central County		ABA	0.008	1.1	0.38		
	Central County		CF	0.010	1.3	0.50		
<b>SUBJE1</b>	Central County		GGA	0.185	74.9	0.25		
	Central County		BT	0.004	1.5	0.25		
	Central County		AO	0.006	2.3	0.04		
	Central County		GT	0.026	10.5	0.04		
	Central County		ES	0.018	7.3	0.25		
	Central County		TT	0.009	3.6	0.04		
<b>SUBJE2</b>	Central County		AO	0.055	21.9	0.04		
	Central County		GGA	0.039	15.4	0.25		
	Central County		GT	0.047	18.5	0.04		
	Central County		TT	0.001	0.2	0.04		
	Central County		GC	0.028	11.1	0.01		
	Central County		GV	0.059	23.2	0.01		
	Central County		CN	0.024	9.6	0.01		
<b>SUBWT1</b>	Central County		MP	0.004	0.6	0.25		
	Central County		CN	0.009	1.5	0.01		
	Central County		MR	0.004	0.8	0.05		
	Central County		TU	0.030	5.2	0.25		
	Central County		ES	0.007	1.2	0.25		
	Central County		GR	0.264	45.4	0.23		
	Central County		GGA	0.156	26.8	0.25		
	Central County		TW	0.021	3.7	0.05		
	Central County		GT	0.019	3.2	0.04		
	Central County		TC	0.047	8.1	0.40		
	Central County		VH	0.000		0.27		
	Central County		BS	0.004	0.7	0.39		
	Central County		CF	0.017	2.9	0.50		
<b>SUBWT2</b>	Central County		LCA	0.001	0.9	0.25		
	Central County		MR	0.006	4.0	0.05		
	Central County		AN	0.006	4.0	0.05		
	Central County		GR	0.002	1.7	0.23		
	Central County		AA	0.013	9.1	0.26		
	Central County		GGA	0.032	22.7	0.25		
	Central County		AO	0.006	4.4	0.04		
	Central County		GE	0.060	43.4	0.26		
	Central County		VA	0.009	6.3	0.39		
	Central County		CF	0.004	3.2	0.50		
	Central County		VH	0.001	0.4	0.27		

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***Appendix B***  
***Land Use Data***

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**Land Use Data**

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Area Id	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
<b>SUBAA</b>	1	0.435	89.4	Normal	80.0		0.50	0.100
	12	0.052	10.6	Normal	50.0	15	0.20	0.050
<b>SUBAB</b>	1	0.302	69.8	Normal	80.0		0.50	0.100
	12	0.130	30.2	Normal	50.0	15	0.20	0.050
<b>SUBAC</b>	12	0.090	19.8	Normal	50.0	15	0.20	0.050
	1	0.366	80.2	Normal	80.0		0.50	0.100
<b>SUBAD</b>	1	0.400	91.6	Normal	80.0		0.50	0.100
	22	0.037	8.4	Dry	15.0		0.35	0.020
<b>SUBBA</b>	12	0.172	49.8	Normal	50.0	15	0.20	0.050
	1	0.150	43.5	Normal	80.0		0.50	0.100
	2	0.017	5.0	Normal	80.0		0.70	0.100
	22	0.006	1.6	Dry	15.0		0.35	0.020
<b>SUBBB</b>	12	0.001	0.2	Normal	50.0	15	0.20	0.050
	22	0.041	16.7	Dry	15.0		0.35	0.020
	1	0.204	83.1	Normal	80.0		0.50	0.100
<b>SUBBC</b>	22	0.036	5.7	Dry	15.0		0.35	0.020
	12	0.017	2.7	Normal	50.0	15	0.20	0.050
	9	0.103	16.4	Normal	70.0	55	0.10	0.030
	1	0.474	75.2	Normal	80.0		0.50	0.100
<b>SUBCA</b>	1	0.984	100.0	Normal	80.0		0.50	0.100
<b>SUBCB</b>	1	0.739	100.0	Normal	80.0		0.50	0.100
<b>SUBCC</b>	25	0.109	11.1	Normal	10.0		0.50	0.100
	1	0.441	45.0	Normal	80.0		0.50	0.100
	12	0.311	31.7	Normal	50.0	15	0.20	0.050
	13	0.042	4.3	Normal	50.0	30	0.15	0.050
	22	0.079	8.0	Dry	15.0		0.35	0.020
<b>SUBDA</b>	1	0.205	62.4	Normal	80.0		0.50	0.100
	12	0.123	37.6	Normal	50.0	15	0.20	0.050
<b>SUBDC</b>	1	0.766	92.3	Normal	80.0		0.50	0.100
	12	0.064	7.7	Normal	50.0	15	0.20	0.050

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Area Id	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
<b>SUBDD</b>	25	0.033	24.7	Normal	10.0		0.50	0.100
	1	0.100	75.3	Normal	80.0		0.50	0.100
<b>SUBEA</b>	1	1.242	94.1	Normal	80.0		0.50	0.100
	25	0.079	5.9	Normal	10.0		0.50	0.100
<b>SUBEB</b>	1	0.139	100.0	Normal	80.0		0.50	0.100
<b>SUBED</b>	1	0.483	100.0	Normal	80.0		0.50	0.100
<b>SUBFB</b>	12	0.265	40.4	Normal	50.0	15	0.20	0.050
	1	0.244	37.2	Normal	80.0		0.50	0.100
	25	0.088	13.4	Normal	10.0		0.50	0.100
	22	0.059	9.0	Dry	15.0		0.35	0.020
<b>SUBFC</b>	9	0.331	92.7	Normal	70.0	55	0.10	0.030
	22	0.026	7.3	Dry	15.0		0.35	0.020
<b>SUBGA</b>	22	0.061	43.9	Dry	15.0		0.35	0.020
	12	0.078	56.1	Normal	50.0	15	0.20	0.050
<b>SUBGB</b>	12	0.130	58.7	Normal	50.0	15	0.20	0.050
	13	0.057	25.8	Normal	50.0	30	0.15	0.050
	1	0.034	15.5	Normal	80.0		0.50	0.100
<b>SUBGC</b>	1	0.011	5.1	Normal	80.0		0.50	0.100
	13	0.051	23.7	Normal	50.0	30	0.15	0.050
	12	0.122	56.6	Normal	50.0	15	0.20	0.050
	22	0.016	7.5	Dry	15.0		0.35	0.020
	25	0.015	7.1	Normal	10.0		0.50	0.100
<b>SUBGD</b>	1	0.702	83.7	Normal	80.0		0.50	0.100
	25	0.119	14.2	Normal	10.0		0.50	0.100
	24	0.017	2.0	Normal	90.0		0.20	0.200
<b>SUBHA</b>	1	0.130	86.9	Normal	80.0		0.50	0.100
	6	0.020	13.1	Normal	75.0	40	0.20	0.020
<b>SUBHB</b>	1	0.220	64.1	Normal	80.0		0.50	0.100
	12	0.123	35.9	Normal	50.0	15	0.20	0.050
<b>SUBIA</b>	12	0.126	40.7	Normal	50.0	15	0.20	0.050

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Area Id	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
<b>SUBIA</b>	1	0.183	59.3	Normal	80.0		0.50	0.100
<b>SUBIB</b>	1	0.479	100.0	Normal	80.0		0.50	0.100
<b>SUBIC</b>	25	0.053	10.2	Normal	10.0		0.50	0.100
	1	0.462	89.8	Normal	80.0		0.50	0.100
<b>SUBID</b>	1	0.416	73.9	Normal	80.0		0.50	0.100
	25	0.135	24.0	Normal	10.0		0.50	0.100
	6	0.012	2.1	Normal	75.0	40	0.20	0.020
<b>SUBIE</b>	1	0.302	100.0	Normal	80.0		0.50	0.100
<b>SUBJB</b>	1	0.988	100.0	Normal	80.0		0.50	0.100
<b>SUBJC</b>	1	0.693	70.2	Normal	80.0		0.50	0.100
	13	0.191	19.3	Normal	50.0	30	0.15	0.050
	12	0.103	10.5	Normal	50.0	15	0.20	0.050
<b>SUBJD</b>	13	0.188	37.2	Normal	50.0	30	0.15	0.050
	9	0.087	17.1	Normal	70.0	55	0.10	0.030
	22	0.065	12.9	Dry	15.0		0.35	0.020
	1	0.032	6.2	Normal	80.0		0.50	0.100
	12	0.134	26.6	Normal	50.0	15	0.20	0.050
<b>SUBJF</b>	9	0.501	100.0	Normal	70.0	55	0.10	0.030
<b>SUBJG</b>	9	0.827	91.8	Normal	70.0	55	0.10	0.030
	22	0.025	2.8	Dry	15.0		0.35	0.020
	22	0.034	3.8	Dry	15.0		0.35	0.020
	12	0.007	0.7	Normal	50.0	15	0.20	0.050
	9	0.008	0.9	Normal	70.0	55	0.10	0.030
<b>SUBJH</b>	9	0.112	21.7	Normal	70.0	55	0.10	0.030
	1	0.317	61.4	Normal	80.0		0.50	0.100
	22	0.060	11.5	Dry	15.0		0.35	0.020
	23	0.028	5.3	Normal	75.0	90	0.05	0.020
<b>SUBJI</b>	1	0.115	37.4	Normal	80.0		0.50	0.100
	3	0.052	16.9	Normal	80.0	90	0.15	0.020
	22	0.020	6.4	Dry	15.0		0.35	0.020
	9	0.035	11.3	Normal	70.0	55	0.10	0.030

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	25	0.086	27.9	Normal	10.0		0.50	0.100
<b>SUBKA</b>	13	1.037	77.1	Normal	50.0	30	0.15	0.050
	17	0.288	21.4	Normal	90.0		0.20	0.100
	6	0.020	1.5	Normal	75.0	40	0.20	0.020
<b>SUBKB</b>	17	0.000	0.1	Normal	90.0		0.20	0.100
	12	0.042	9.9	Normal	50.0	15	0.20	0.050
	22	0.073	17.5	Dry	15.0		0.35	0.020
	1	0.184	43.9	Normal	80.0		0.50	0.100
	13	0.032	7.7	Normal	50.0	30	0.15	0.050
	25	0.066	15.8	Normal	10.0		0.50	0.100
	9	0.021	5.1	Normal	70.0	55	0.10	0.030
<b>SUBKC</b>	1	0.264	100.0	Normal	80.0		0.50	0.100
<b>SUBKD</b>	1	0.671	95.5	Normal	80.0		0.50	0.100
	9	0.031	4.5	Normal	70.0	55	0.10	0.030
<b>SUBLA</b>	17	0.001	0.3	Normal	90.0		0.20	0.100
	13	0.243	47.3	Normal	50.0	30	0.15	0.050
	1	0.212	41.2	Normal	80.0		0.50	0.100
	6	0.041	7.9	Normal	75.0	40	0.20	0.020
	3	0.018	3.4	Normal	80.0	90	0.15	0.020
	12	0.000		Normal	50.0	15	0.20	0.050
<b>SUBLB</b>	1	0.249	100.0	Normal	80.0		0.50	0.100
<b>SUBLC</b>	3	0.033	27.8	Normal	80.0	90	0.15	0.020
	13	0.086	71.7	Normal	50.0	30	0.15	0.050
	1	0.001	0.6	Normal	80.0		0.50	0.100
<b>SUBLD</b>	13	0.263	94.7	Normal	50.0	30	0.15	0.050
	3	0.000	0.1	Normal	80.0	90	0.15	0.020
	22	0.014	5.1	Dry	15.0		0.35	0.020
	1	0.000	0.1	Normal	80.0		0.50	0.100
<b>SUBLE</b>	1	0.220	87.9	Normal	80.0		0.50	0.100
	9	0.030	12.1	Normal	70.0	55	0.10	0.030
<b>SUBMA</b>	1	0.247	100.0	Normal	80.0		0.50	0.100

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<b>SUBMA</b>	12	0.000		Normal	50.0	15	0.20	0.050
<b>SUBMB</b>	1	0.959	96.4	Normal	80.0		0.50	0.100
	9	0.036	3.6	Normal	70.0	55	0.10	0.030
	22	0.000		Dry	15.0		0.35	0.020
<b>SUBMC</b>	1	0.916	91.7	Normal	80.0		0.50	0.100
	9	0.080	8.0	Normal	70.0	55	0.10	0.030
	8	0.003	0.3	Normal	60.0	55	0.20	0.030
<b>SUBMD</b>	1	0.000	0.2	Normal	80.0		0.50	0.100
	13	0.254	99.8	Normal	50.0	30	0.15	0.050
<b>SUBME</b>	22	0.030	9.3	Dry	15.0		0.35	0.020
	6	0.015	4.6	Normal	75.0	40	0.20	0.020
	1	0.233	71.6	Normal	80.0		0.50	0.100
	17	0.014	4.4	Normal	90.0		0.20	0.100
	13	0.033	10.2	Normal	50.0	30	0.15	0.050
<b>SUBMF</b>	1	0.971	100.0	Normal	80.0		0.50	0.100
<b>SUBMG</b>	9	0.047	58.0	Normal	70.0	55	0.10	0.030
	1	0.034	42.0	Normal	80.0		0.50	0.100
<b>SUBMH</b>	1	0.239	100.0	Normal	80.0		0.50	0.100
<b>SUBMI</b>	1	0.287	70.3	Normal	80.0		0.50	0.100
	9	0.121	29.7	Normal	70.0	55	0.10	0.030
<b>SUBNA</b>	1	0.838	85.7	Normal	80.0		0.50	0.100
	25	0.012	1.2	Normal	10.0		0.50	0.100
	12	0.004	0.4	Normal	50.0	15	0.20	0.050
	13	0.125	12.7	Normal	50.0	30	0.15	0.050
<b>SUBNB</b>	13	0.089	20.2	Normal	50.0	30	0.15	0.050
	9	0.206	46.5	Normal	70.0	55	0.10	0.030
	12	0.014	3.0	Normal	50.0	15	0.20	0.050
	7	0.134	30.3	Normal	60.0	40	0.15	0.050
<b>SUBNC</b>	9	0.284	92.7	Normal	70.0	55	0.10	0.030
	25	0.022	7.3	Normal	10.0		0.50	0.100

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<b>SUBOB</b>	1	0.062	13.8	Normal	80.0		0.50	0.100
	23	0.383	86.2	Normal	75.0	90	0.05	0.020
<b>SUBOC</b>	23	0.194	62.6	Normal	75.0	90	0.05	0.020
	1	0.103	33.2	Normal	80.0		0.50	0.100
	9	0.013	4.2	Normal	70.0	55	0.10	0.030
<b>SUBOD</b>	9	0.110	21.6	Normal	70.0	55	0.10	0.030
	1	0.284	55.8	Normal	80.0		0.50	0.100
	23	0.115	22.6	Normal	75.0	90	0.05	0.020
<b>SUBOE</b>	23	0.119	25.4	Normal	75.0	90	0.05	0.020
	9	0.089	19.1	Normal	70.0	55	0.10	0.030
	1	0.246	52.5	Normal	80.0		0.50	0.100
	25	0.014	3.1	Normal	10.0		0.50	0.100
<b>SUBOF</b>	1	0.076	31.0	Normal	80.0		0.50	0.100
	23	0.169	69.0	Normal	75.0	90	0.05	0.020
<b>SUBOG</b>	14	0.019	3.8	Normal	75.0	90	0.15	0.020
	1	0.116	23.6	Normal	80.0		0.50	0.100
	11	0.016	3.3	Normal	75.0	65	0.15	0.020
	6	0.031	6.3	Normal	75.0	40	0.20	0.020
	13	0.159	32.3	Normal	50.0	30	0.15	0.050
	17	0.041	8.4	Normal	90.0		0.20	0.100
	9	0.109	22.2	Normal	70.0	55	0.10	0.030
<b>SUBPA</b>	1	0.243	50.9	Normal	80.0		0.50	0.100
	22	0.056	11.8	Dry	15.0		0.35	0.020
	9	0.178	37.3	Normal	70.0	55	0.10	0.030
<b>SUBPB</b>	22	0.050	11.4	Dry	15.0		0.35	0.020
	1	0.221	50.4	Normal	80.0		0.50	0.100
	9	0.135	30.9	Normal	70.0	55	0.10	0.030
	23	0.033	7.4	Normal	75.0	90	0.05	0.020
<b>SUBPC</b>	1	0.000	0.1	Normal	80.0		0.50	0.100
	9	0.130	43.3	Normal	70.0	55	0.10	0.030
	22	0.110	36.5	Dry	15.0		0.35	0.020
	23	0.060	20.1	Normal	75.0	90	0.05	0.020

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<b>SUBPD</b>	9	0.375	84.6	Normal	70.0	55	0.10	0.030
	22	0.068	15.4	Dry	15.0		0.35	0.020
<b>SUBPE</b>	9	0.274	54.4	Normal	70.0	55	0.10	0.030
	23	0.144	28.5	Normal	75.0	90	0.05	0.020
	22	0.080	15.8	Dry	15.0		0.35	0.020
	1	0.007	1.3	Normal	80.0		0.50	0.100
<b>SUBPF</b>	22	0.127	25.2	Dry	15.0		0.35	0.020
	23	0.203	40.5	Normal	75.0	90	0.05	0.020
	9	0.138	27.6	Normal	70.0	55	0.10	0.030
	1	0.034	6.7	Normal	80.0		0.50	0.100
<b>SUBQA</b>	9	0.172	35.5	Normal	70.0	55	0.10	0.030
	22	0.072	14.8	Dry	15.0		0.35	0.020
	1	0.241	49.7	Normal	80.0		0.50	0.100
<b>SUBQB</b>	9	0.243	48.2	Normal	70.0	55	0.10	0.030
	22	0.036	7.2	Dry	15.0		0.35	0.020
	1	0.225	44.6	Normal	80.0		0.50	0.100
<b>SUBQC</b>	9	0.309	51.0	Normal	70.0	55	0.10	0.030
	23	0.028	4.7	Normal	75.0	90	0.05	0.020
	22	0.170	28.1	Dry	15.0		0.35	0.020
	1	0.098	16.2	Normal	80.0		0.50	0.100
<b>SUBQD</b>	9	0.127	50.7	Normal	70.0	55	0.10	0.030
	23	0.064	25.5	Normal	75.0	90	0.05	0.020
	22	0.029	11.5	Dry	15.0		0.35	0.020
	25	0.031	12.3	Normal	10.0		0.50	0.100
<b>SUBQE</b>	9	0.304	33.3	Normal	70.0	55	0.10	0.030
	17	0.007	0.8	Normal	90.0		0.20	0.100
	22	0.047	5.2	Dry	15.0		0.35	0.020
	23	0.324	35.5	Normal	75.0	90	0.05	0.020
	7	0.057	6.2	Normal	60.0	40	0.15	0.050
	13	0.060	6.5	Normal	50.0	30	0.15	0.050
	3	0.015	1.6	Normal	80.0	90	0.15	0.020
	1	0.099	10.9	Normal	80.0		0.50	0.100

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<b>SUBRA</b>	1	0.222	100.0	Normal	80.0		0.50	0.100
<b>SUBRB</b>	1	0.440	80.1	Normal	80.0		0.50	0.100
	22	0.109	19.9	Dry	15.0		0.35	0.020
<b>SUBRC</b>	1	0.683	100.0	Normal	80.0		0.50	0.100
<b>SUBRD</b>	1	0.366	100.0	Normal	80.0		0.50	0.100
<b>SUBRE</b>	1	0.374	100.0	Normal	80.0		0.50	0.100
<b>SUBRF</b>	1	0.314	50.0	Normal	80.0		0.50	0.100
	7	0.189	30.1	Normal	60.0	40	0.15	0.050
	9	0.027	4.3	Normal	70.0	55	0.10	0.030
	22	0.018	2.8	Dry	15.0		0.35	0.020
	13	0.012	1.9	Normal	50.0	30	0.15	0.050
	17	0.009	1.4	Normal	90.0		0.20	0.100
	11	0.015	2.4	Normal	75.0	65	0.15	0.020
	14	0.045	7.1	Normal	75.0	90	0.15	0.020
<b>SUBRG</b>	23	0.111	99.8	Normal	75.0	90	0.05	0.020
	1	0.000	0.2	Normal	80.0		0.50	0.100
<b>SUBRH</b>	1	0.245	100.0	Normal	80.0		0.50	0.100
<b>SUBRI</b>	1	0.171	73.8	Normal	80.0		0.50	0.100
	23	0.061	26.2	Normal	75.0	90	0.05	0.020
<b>SUBRJ</b>	9	0.074	45.7	Normal	70.0	55	0.10	0.030
	1	0.088	54.3	Normal	80.0		0.50	0.100
<b>SUBSA</b>	13	0.275	65.5	Normal	50.0	30	0.15	0.050
	12	0.145	34.5	Normal	50.0	15	0.20	0.050
<b>SUBSB</b>	1	0.168	100.0	Normal	80.0		0.50	0.100
<b>SUBSC</b>	9	0.056	12.3	Normal	70.0	55	0.10	0.030
	1	0.347	76.5	Normal	80.0		0.50	0.100
	22	0.051	11.3	Dry	15.0		0.35	0.020
<b>SUBSD</b>	22	0.081	48.5	Dry	15.0		0.35	0.020
	1	0.087	51.5	Normal	80.0		0.50	0.100

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<b>SUBSE</b>	9	0.125	100.0	Normal	70.0	55	0.10	0.030
<b>SUBSF</b>	1	0.351	93.5	Normal	80.0		0.50	0.100
	22	0.025	6.5	Dry	15.0		0.35	0.020
<b>SUBSG</b>	1	0.049	36.3	Normal	80.0		0.50	0.100
	9	0.087	63.7	Normal	70.0	55	0.10	0.030
<b>SUBSH</b>	22	0.015	14.4	Dry	15.0		0.35	0.020
	1	0.013	12.7	Normal	80.0		0.50	0.100
	9	0.075	72.9	Normal	70.0	55	0.10	0.030
<b>SUBTA</b>	1	0.241	100.0	Normal	80.0		0.50	0.100
<b>SUBTB</b>	13	0.017	1.9	Normal	50.0	30	0.15	0.050
	22	0.239	26.9	Dry	15.0		0.35	0.020
	23	0.078	8.8	Normal	75.0	90	0.05	0.020
	9	0.124	14.0	Normal	70.0	55	0.10	0.030
	17	0.006	0.6	Normal	90.0		0.20	0.100
	6	0.008	0.9	Normal	75.0	40	0.20	0.020
	1	0.164	18.4	Normal	80.0		0.50	0.100
	7	0.252	28.4	Normal	60.0	40	0.15	0.050
<b>SUBUA</b>	13	0.166	29.6	Normal	50.0	30	0.15	0.050
	12	0.076	13.6	Normal	50.0	15	0.20	0.050
	17	0.031	5.4	Normal	90.0		0.20	0.100
	7	0.073	13.0	Normal	60.0	40	0.15	0.050
	22	0.062	11.0	Dry	15.0		0.35	0.020
	4	0.064	11.4	Normal	50.0	50	0.10	0.050
	1	0.090	16.0	Normal	80.0		0.50	0.100
<b>SUBUB</b>	1	0.000	0.1	Normal	80.0		0.50	0.100
	12	0.099	78.2	Normal	50.0	15	0.20	0.050
	22	0.027	21.7	Dry	15.0		0.35	0.020
<b>SUBUC</b>	12	0.121	25.0	Normal	50.0	15	0.20	0.050
	9	0.215	44.5	Normal	70.0	55	0.10	0.030
	1	0.094	19.4	Normal	80.0		0.50	0.100
	22	0.054	11.2	Dry	15.0		0.35	0.020

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<b>SUBUD</b>	22	0.056	7.4	Dry	15.0		0.35	0.020
	9	0.296	39.0	Normal	70.0	55	0.10	0.030
	14	0.032	4.2	Normal	75.0	90	0.15	0.020
	1	0.349	46.0	Normal	80.0		0.50	0.100
	13	0.026	3.4	Normal	50.0	30	0.15	0.050
<b>SUBUE</b>	9	0.016	25.4	Normal	70.0	55	0.10	0.030
	1	0.047	74.6	Normal	80.0		0.50	0.100
<b>SUBVA</b>	23	0.049	9.9	Normal	75.0	90	0.05	0.020
	9	0.444	90.1	Normal	70.0	55	0.10	0.030
<b>SUBVB</b>	9	0.588	81.6	Normal	70.0	55	0.10	0.030
	22	0.133	18.4	Dry	15.0		0.35	0.020
<b>SUBVC</b>	22	0.043	8.7	Dry	15.0		0.35	0.020
	9	0.447	91.3	Normal	70.0	55	0.10	0.030
<b>SUBVD</b>	14	0.060	8.6	Normal	75.0	90	0.15	0.020
	13	0.400	57.4	Normal	50.0	30	0.15	0.050
	4	0.136	19.5	Normal	50.0	50	0.10	0.050
	17	0.008	1.1	Normal	90.0		0.20	0.100
	22	0.054	7.8	Dry	15.0		0.35	0.020
	6	0.017	2.4	Normal	75.0	40	0.20	0.020
	12	0.014	1.9	Normal	50.0	15	0.20	0.050
	7	0.009	1.2	Normal	60.0	40	0.15	0.050
<b>SUBWA</b>	9	0.386	78.5	Normal	70.0	55	0.10	0.030
	22	0.106	21.5	Dry	15.0		0.35	0.020
<b>SUBWB</b>	11	0.014	2.0	Normal	75.0	65	0.15	0.020
	13	0.440	66.0	Normal	50.0	30	0.15	0.050
	17	0.057	8.5	Normal	90.0		0.20	0.100
	22	0.004	0.6	Dry	15.0		0.35	0.020
	6	0.054	8.1	Normal	75.0	40	0.20	0.020
	7	0.023	3.4	Normal	60.0	40	0.15	0.050
	14	0.065	9.8	Normal	75.0	90	0.15	0.020
	3	0.011	1.6	Normal	80.0	90	0.15	0.020
<b>SUBWC</b>	14	0.084	17.3	Normal	75.0	90	0.15	0.020

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<b>SUBWC</b>	4	0.007	1.4	Normal	50.0	50	0.10	0.050
	13	0.225	46.2	Normal	50.0	30	0.15	0.050
	22	0.043	8.7	Dry	15.0		0.35	0.020
	6	0.010	2.1	Normal	75.0	40	0.20	0.020
	9	0.085	17.4	Normal	70.0	55	0.10	0.030
	9	0.018	3.6	Normal	70.0	55	0.10	0.030
	17	0.016	3.3	Normal	90.0		0.20	0.100
<b>SUBWD</b>	23	0.015	3.7	Normal	75.0	90	0.05	0.020
	22	0.048	12.2	Dry	15.0		0.35	0.020
	17	0.257	65.6	Normal	90.0		0.20	0.100
	13	0.050	12.7	Normal	50.0	30	0.15	0.050
	3	0.017	4.4	Normal	80.0	90	0.15	0.020
	14	0.006	1.4	Normal	75.0	90	0.15	0.020
<b>SUBXA</b>	23	0.020	8.1	Normal	75.0	90	0.05	0.020
	4	0.017	7.0	Normal	50.0	50	0.10	0.050
	13	0.141	56.9	Normal	50.0	30	0.15	0.050
	14	0.004	1.6	Normal	75.0	90	0.15	0.020
	9	0.066	26.5	Normal	70.0	55	0.10	0.030
<b>SUBEC</b>	9	0.000	0.5	Normal	70.0	55	0.10	0.030
	1	0.042	99.5	Normal	80.0		0.50	0.100
<b>SUBEE</b>	12	0.045	4.7	Normal	50.0	15	0.20	0.050
	1	0.557	58.1	Normal	80.0		0.50	0.100
	25	0.329	34.4	Normal	10.0		0.50	0.100
	22	0.016	1.7	Dry	15.0		0.35	0.020
	9	0.011	1.2	Normal	70.0	55	0.10	0.030
<b>SUBFA</b>	1	0.502	65.7	Normal	80.0		0.50	0.100
	9	0.262	34.3	Normal	70.0	55	0.10	0.030
<b>SUBJE1</b>	13	0.001	0.3	Normal	50.0	30	0.15	0.050
	9	0.246	99.5	Normal	70.0	55	0.10	0.030
	22	0.001	0.2	Dry	15.0		0.35	0.020
<b>SUBJE2</b>	12	0.011	4.2	Normal	50.0	15	0.20	0.050
	13	0.093	36.7	Normal	50.0	30	0.15	0.050
	9	0.149	59.1	Normal	70.0	55	0.10	0.030

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**Land Use Data**

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Area Id	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
SUBWT1	9	0.582	100.0	Normal	70.0	55	0.10	0.030
SUBWT2	9	0.140	100.0	Normal	70.0	55	0.10	0.030

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***Appendix C***  
***Subbasin Data***

Flood Control District of Maricopa County  
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**Sub Basin Data**

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Basin: 01			Storms: Multiple		Duration: 24 Hour			Loss Method: Green-Ampt			Unit Hydrograph: S-Graph		
Area ID	Sub Basin Parameters							Rainfall Losses					
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)	
SUBAA	0.49	1.89	9.0	Agriculture	1.25	125	0.095	0.47	0.07 *	4.70	0.44 *	2	
SUBIB	0.48	1.13	14.2	Agriculture	0.57	74	0.100	0.50	0.15	8.40	0.11		
SUBAB	0.43	1.06	12.3	Agriculture	0.49	59	0.085	0.41	0.12 *	5.70	0.31 *	5	
SUBAC	0.46	1.10	20.0	Agriculture	0.56	61	0.090	0.44	0.25	5.40	0.35 *	3	
SUBAD	0.44	1.10	10.9	Agriculture	0.49	67	0.093	0.49	0.26	5.20	0.37		
SUBBA	0.35	1.48	8.1	Agriculture	0.74	74	0.074	0.36	0.10 *	5.00	0.37	7	
SUBBB	0.25	1.02	7.8	Agriculture	0.49	65	0.087	0.47	0.18	7.60	0.13		
SUBBC	0.63	1.74	11.5	Agriculture	0.76	84	0.083	0.42	0.26	5.00	0.40	9	
SUBCA	0.98	1.40	6.4	Agriculture	0.57	93	0.100	0.50	0.15	8.80	0.09		
SUBCB	0.74	1.17	11.1	Agriculture	0.49	74	0.100	0.50	0.15	9.70	0.07		
SUBCC	0.98	1.36	22.8	Agriculture	0.68	59	0.076	0.38	0.24	6.20	0.21	6	
SUBDA	0.33	1.02	17.6	Agriculture	0.57	55	0.081	0.39	0.17	6.80	0.18	6	
SUBDC	0.83	1.40	22.1	Agriculture	0.45	64	0.096	0.48	0.25	6.00	0.27	1	
SUBDD	0.13	0.53	28.3	Agriculture	0.27	36	0.100	0.50	0.25	4.65	0.43		
SUBEA	1.32	1.55	21.3	Agriculture	0.83	89	0.100	0.50	0.25	5.30	0.34 *		
SUBEC	0.04	0.95	11.6	Agriculture	0.49	68	0.100	0.50	0.25	4.70	0.47		
SUBED	0.48	1.17	9.4	Agriculture	0.64	84	0.100	0.50	0.25	5.70	0.31		
SUBEE	0.96	1.62	16.0	Agriculture	1.02	99	0.096	0.48	0.25	4.90	0.34 *	1	
SUBFA	0.76	1.40	7.9	Agriculture	0.76	76	0.076	0.36	0.04 *	5.30	0.35	19	
SUBFB	0.66	1.17	16.2	Agriculture	0.45	49	0.073	0.37	0.21	6.60	0.18	6	
SUBFC	0.36	1.02	18.6	Agriculture	0.37	17	0.029	0.12	0.16	7.60	0.13	51	
SUBGA	0.14	0.57	52.6	Agriculture	0.27	12	0.037	0.27	0.29	4.55	0.37	8	
SUBGB	0.22	0.83	36.1	Agriculture	0.57	32	0.058	0.23	0.25	4.55	0.42	17	
SUBGC	0.22	0.83	26.5	Agriculture	0.42	28	0.054	0.24	0.26	4.70	0.34 *	16	
SUBGD	0.84	1.14	33.3	Agriculture	0.57	64	0.102	0.49	0.15	7.00	0.17		

Flood Control District of Maricopa County  
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**Sub Basin Data**

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Basin: 01			Storms: Multiple		Duration: 24 Hour			Loss Method: Green-Ampt			Unit Hydrograph: S-Graph		
Area ID	Sub Basin Parameters							Rainfall Losses					
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)	
SUBHA	0.15	0.80	33.8	Agriculture	0.38	42	0.090	0.46	0.25	4.70	0.44	*	5
SUBHB	0.34	0.80	25.0	Agriculture	0.39	41	0.082	0.39	0.25	4.80	0.41		5
SUBIA	0.31	0.76	17.1	Agriculture	0.38	42	0.080	0.38	0.25	6.00	0.25		6
SUBIC	0.52	1.06	4.7	Agriculture	0.53	86	0.100	0.50	0.25	5.30	0.34		
SUBID	0.56	0.98	7.1	Agriculture	0.38	67	0.098	0.49	0.25	6.00	0.24		1
SUBIE	0.30	0.83	6.0	Agriculture	0.42	69	0.100	0.50	0.15	8.80	0.09		
SUBJB	0.99	1.32	17.4	Agriculture	0.66	79	0.100	0.50	0.25	5.70	0.31		
SUBJC	0.99	1.36	14.0	Agriculture	0.68	72	0.085	0.40	0.15	7.00	0.17		7
SUBJD	0.51	1.10	12.7	Agriculture	0.55	34	0.046	0.20	0.17	7.60	0.11		25
SUBJE1	0.25	0.50	19.8	Agriculture	0.25	11	0.030	0.10	0.25	5.40	0.32		55
SUBJF	0.50	0.50	13.2	Agriculture	0.25	12	0.030	0.10	0.15	7.60	0.14		55
SUBJG	0.90	1.00	13.2	Agriculture	0.50	20	0.029	0.12	0.16	8.40	0.10		51
SUBJH	0.52	0.50	13.2	Valley	0.25	28	0.071	0.37	0.11	11.20	0.03		17
SUBJI	0.31	0.25	13.2	Valley	0.20	21	0.073	0.39	0.11	11.20	0.03		21
SUBJE2	0.25	0.50	19.8	Agriculture	0.25	14	0.038	0.12	0.13	10.10	0.05		44
SUBKA	1.35	1.74	19.5	Agriculture	0.87	58	0.060	0.16	0.25	4.80	0.36	*	24
SUBKB	0.42	0.95	23.2	Agriculture	0.30	36	0.074	0.40	0.27	5.00	0.36	*	7
SUBKC	0.26	0.76	26.3	Agriculture	0.42	50	0.100	0.50	0.25	4.60	0.50		
SUBKD	0.70	1.40	12.9	Agriculture	0.72	86	0.097	0.48	0.25	4.90	0.43		2
SUBLA	0.52	1.14	12.3	Agriculture	0.57	51	0.067	0.30	0.25	4.70	0.42		20
SUBLB	0.25	0.68	8.8	Agriculture	0.34	55	0.100	0.50	0.25	4.60	0.49	*	
SUBLC	0.12	0.30	6.7	Agriculture	0.20	14	0.042	0.15	0.25	4.80	0.44	*	47
SUBLD	0.28	0.83	13.3	Agriculture	0.42	28	0.048	0.16	0.26	4.80	0.37	*	29
SUBLE	0.25	0.68	14.7	Agriculture	0.34	46	0.092	0.45	0.25	4.80	0.45		7
SUBMA	0.25	0.68	14.7	Agriculture	0.34	50	0.100	0.50	0.25	4.55	0.52		

Flood Control District of Maricopa County  
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**Sub Basin Data**

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Basin: 01			Storms: Multiple		Duration: 24 Hour			Loss Method: Green-Ampt			Unit Hydrograph: S-Graph		
Area ID	Sub Basin Parameters							Rainfall Losses					
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)	
SUBMB	1.00	1.36	17.6	Agriculture	0.68	79	0.097	0.49	0.15	8.40	0.10 *	2	
SUBMC	1.00	1.40	13.6	Agriculture	0.70	82	0.094	0.47	0.15	8.80	0.09	5	
SUBMD	0.26	1.40	14.3	Agriculture	0.64	42	0.050	0.15	0.08 *	7.60	0.11	30	
SUBME	0.33	1.02	20.6	Agriculture	0.45	51	0.084	0.42	0.26	4.70	0.44	5	
SUBMF	0.97	1.40	12.9	Agriculture	0.70	88	0.100	0.50	0.15	8.40	0.10 *		
SUBMG	0.08	0.30	8.8	Agriculture	0.15	17	0.059	0.27	0.15	7.00	0.17	32	
SUBMI	0.41	0.50	14.3	Agriculture	0.25	31	0.079	0.38	0.15	8.40	0.11	16	
SUBMH	0.24	0.50	14.3	Agriculture	0.25	39	0.100	0.50	0.15	8.80	0.09		
SUBNA	0.98	1.36	16.2	Agriculture	0.68	77	0.093	0.45	0.15	8.00	0.12	4	
SUBNB	0.44	0.95	16.8	Agriculture	0.47	25	0.041	0.13	0.11 *	6.80	0.17 *	44	
SUBNC	0.31	0.68	14.7	Agriculture	0.30	17	0.035	0.47 *	0.25	5.30	0.35 *	51	
SUBOB	0.45	1.06	17.0	Agriculture	0.64	22	0.031	0.11	0.25	5.10	0.38	78	
SUBOC	0.31	0.76	13.2	Agriculture	0.45	28	0.047	0.20	0.15	9.70	0.07	59	
SUBOD	0.51	1.10	18.2	Agriculture	0.55	46	0.067	0.31	0.15	9.70	0.07	32	
SUBOE	0.47	1.10	17.3	Agriculture	0.55	46	0.066	0.31	0.23	6.20	0.24	33	
SUBUE	0.06	0.34	26.5	Agriculture	0.17	21	0.082	0.40	0.13	10.10	0.05	14	
SUBOF	0.25	0.68	27.9	Agriculture	0.32	19	0.045	0.19	0.15	8.80	0.09	62	
SUBOG	0.49	1.14	12.3	Agriculture	0.56	43	0.057	0.23	0.15	9.70	0.07	30	
SUBPA	0.48	1.14	16.7	Agriculture	0.57	46	0.064	0.33	0.17	7.30	0.14 *	21	
SUBPB	0.44	0.91	12.1	Agriculture	0.45	40	0.063	0.33	0.16	8.80	0.08	24	
SUBPC	0.30	0.72	11.1	Valley	0.36	13	0.024	0.18	0.19	8.80	0.06 *	42	
SUBPD	0.44	0.95	16.8	Valley	0.45	17	0.028	0.14	0.17	8.00	0.11	24 *	
SUBPE	0.50	1.10	15.5	Valley	0.55	18	0.026	0.13	0.26	6.20	0.22	56	
SUBPF	0.50	1.10	20.0	Valley	0.55	19	0.028	0.17	0.20	7.30	0.12 *	52	
SUBQA	0.49	1.10	18.2	Valley	0.55	43	0.063	0.34	0.14	10.10	0.05	20	

## Flood Control District of Maricopa County

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**Sub Basin Data**

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Basin: 01			Storms: Multiple		Duration: 24 Hour			Loss Method: Green-Ampt			Unit Hydrograph: S-Graph		
Area ID	Sub Basin Parameters							Rainfall Losses					
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)	
SUBQB	0.51	1.10	17.3	Valley	0.55	42	0.061	0.30	0.11	11.20	0.03	27	
SUBQC	0.61	1.14	8.8	Valley	0.64	32	0.038	0.23	0.16	10.10	0.04 *	32	
SUBQE	0.91	1.40	16.4	Valley	0.83	33	0.037	0.15	0.13	10.10	0.04 *	56	
SUBQD	0.25	0.98	12.2	Valley	0.49	24	0.035	0.17	0.06	12.40	0.02	51	
SUBRA	0.22	0.76	9.2	Agriculture	0.37	58	0.100	0.50	0.25	4.80	0.46 *		
SUBRB	0.55	1.14	19.3	Agriculture	0.57	59	0.084	0.47	0.28	5.40	0.32		
SUBRC	0.68	1.21	14.0	Agriculture	0.62	78	0.100	0.50	0.23	6.20	0.24 *		
SUBRD	0.37	0.95	10.5	Agriculture	0.47	68	0.100	0.50	0.25	5.70	0.28 *		
SUBRE	0.37	0.95	6.3	Agriculture	0.47	75	0.100	0.50	0.15	7.30	0.16		
SUBRF	0.63	1.21	11.6	Agriculture	0.68	60	0.071	0.33	0.15	9.70	0.07	23	
SUBRG	0.11	0.56	14.3	Agriculture	0.28	9	0.020	0.05	0.15	9.70	0.07	90	
SUBRH	0.25	0.64	15.6	Agriculture	0.32	47	0.100	0.50	0.15	8.80	0.09		
SUBRI	0.23	0.57	19.3	Agriculture	0.19	28	0.079	0.38	0.15	7.60	0.14	24	
SUBRJ	0.16	0.72	5.6	Agriculture	0.42	45	0.068	0.32	0.15	7.00	0.18	25	
SUBSA	0.42	0.83	9.6	Agriculture	0.30	28	0.050	0.17	0.15	9.70	0.06	25	
SUBSB	0.17	0.53	15.1	Agriculture	0.27	41	0.100	0.50	0.15	9.70	0.07		
SUBSC	0.45	1.32	15.2	Agriculture	0.68	68	0.082	0.43	0.26	5.00	0.39	7	
SUBSD	0.17	0.57	12.3	Agriculture	0.34	29	0.061	0.43	0.28	6.60	0.18		
SUBSE	0.13	0.34	26.5	Agriculture	0.17	8	0.030	0.10	0.25	4.80	0.39 *	55	
SUBSF	0.38	0.87	9.2	Agriculture	0.44	62	0.095	0.49	0.16	9.70	0.07		
SUBSG	0.14	0.60	5.0	Agriculture	0.30	30	0.055	0.25	0.15	8.80	0.09	35	
SUBSH	0.10	0.45	11.1	Agriculture	0.23	14	0.037	0.19	0.16	9.70	0.07	40	
SUBTA	0.24	0.76	10.5	Agriculture	0.37	57	0.100	0.50	0.15	7.00	0.18		
SUBTB	0.89	1.97	10.2	Agriculture	0.79	50	0.046	0.25	0.18	8.80	0.08	28	
SUBUA	0.56	1.21	14.9	Valley	0.57	43	0.057	0.23	0.16	9.70 *	0.06 *	22	

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**Sub Basin Data**

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Basin: 01			Storms: Multiple		Duration: 24 Hour			Loss Method: Green-Ampt			Unit Hydrograph: S-Graph		
Area ID	Sub Basin Parameters							Rainfall Losses					
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)	
SUBUB	0.13	0.80	16.2	Agriculture	0.40	24	0.044	0.23	0.18	8.80	0.08 *	12	
SUBUC	0.48	1.02	12.7	Valley	0.51	33	0.047	0.23	0.15 *	9.70 *	0.06 *	28	
SUBUD	0.76	1.25	20.0	Valley	0.63	46	0.062	0.31	0.16	9.70	0.07	26	
SUBVA	0.49	1.06	8.5	Valley	0.53	22	0.029	0.10	0.15	8.40	0.10	58	
SUBVB	0.72	1.10	11.8	Valley	0.55	21	0.028	0.15	0.17	9.70	0.06	45	
SUBVC	0.49	1.06	8.5	Valley	0.53	22	0.029	0.12	0.16	8.40	0.10	50	
SUBWA	0.49	1.10	9.1	Valley	0.55	22	0.028	0.15	0.15	10.10	0.05	43	
SUBWC	0.49	1.17	6.0	Valley	0.59	35	0.039	0.16	0.16	9.70	0.06	43	
SUBWB	0.67	1.17	12.0	Valley	0.58	37	0.048	0.16	0.15	9.70	0.06	36	
SUBXA	0.25	0.76	10.5	Valley	0.38	24	0.042	0.13	0.15	9.70	0.06	44	
SUBVD	0.70	1.21	9.9	Valley	0.61	37	0.045	0.16	0.16	9.70	0.06	36	
SUBWD	0.39	0.72	11.1	Valley	0.36	41	0.076	0.20	0.19 *	7.00	0.17	12	
SUBEB	0.14	0.53	11.3	Agriculture	0.26	43	0.100	0.50	0.21	6.40	0.23		
SUBWT 1	0.58	1.11	16.0	Valley	0.50	20	0.030	0.10	0.25	5.20	0.36	55	
SUBWT 2	0.14	0.56	16.0	Valley	0.25	12	0.030	0.10	0.25	5.10	0.37	55	

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***Appendix D***  
***Routing Data***

Flood Control District of Maricopa County  
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## Routing Data - Normal Depth

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Basin	Reach ID	RS Card		RC Card					RX and RY Cards									
		NSTPS		ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	1	2	LB	4	5	RB	7	8	
01	RTwdx A	4	0.025	0.025	0.025	2500	0.0016			Sta	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
										Elev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
01	RTxaw C	12	0.035	0.035	0.035	5100	0.0016			Sta	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0
										Elev	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0
01	RTwb WC	3	0.025	0.025	0.025	2500	0.0020			Sta	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0
										Elev	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0
01	RTwc WA	15	0.035	0.035	0.035	5200	0.0012			Sta	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0
										Elev	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0
01	RTvdw A	2	0.100	0.020	0.100	2500	0.0030			Sta	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
										Elev	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7
01	RTwav C	15	0.035	0.035	0.035	5000	0.0028			Sta	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0
										Elev	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0
01	RTvbv C	2	0.100	0.020	0.100	2500	0.0017			Sta	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
										Elev	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7
01	RTvcq A	4	0.100	0.020	0.100	5000	0.0030			Sta	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
										Elev	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7
01	RTqaj H	11	0.100	0.100	0.100	2800	0.0031			Sta	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0
										Elev	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0
01	RTjhj I	14	0.100	0.100	0.100	4000	0.0031			Sta	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0
										Elev	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0
01	RTdiq E	8	0.025	0.025	0.025	6600	0.0030			Sta	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0
										Elev	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0
01	RTqe EQ	3	0.025	0.025	0.025	3000	0.0027			Sta	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0
										Elev	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0
01	Rdiqd	10	0.035	0.035	0.035	5200	0.0024			Sta	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0
										Elev	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0

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Basin	Reach ID	NSTPS	RS Card						RC Card						RX and RY Cards							
			ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	1	2	LB	4	5	RB	7	8						
01	RTQDQC	2	0.100	0.020	0.100	2600	0.0040		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTQCJI	15	0.100	0.100	0.100	6500	0.0028		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
								<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0						
01	RTDIQB	12	0.100	0.100	0.100	2500	0.0028		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
								<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0						
01	RTQBJH	15	0.100	0.100	0.100	3500	0.0028		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
								<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0						
01	RTDIPF	11	0.035	0.035	0.035	2600	0.0005		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
								<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0						
01	RTPFJF	6	0.035	0.035	0.035	4000	0.0040		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
								<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0						
01	RTPEJF	2	0.100	0.020	0.100	2600	0.0036		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTJFJG	4	0.100	0.020	0.100	6000	0.0036		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTPCNB	4	0.100	0.020	0.100	4800	0.0038		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTNBJD	4	0.100	0.020	0.100	5200	0.0054		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTJDFC	2	0.100	0.020	0.100	3000	0.0053		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTPDNC	5	0.035	0.035	0.035	3000	0.0027		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
								<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0						
01	RTNCJE	12	0.035	0.035	0.035	5000	0.0014		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
								<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0						
01	RTJEF C	4	0.035	0.035	0.035	4000	0.0080		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
								<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0						

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Basin	Reach ID	RS Card		RC Card					RX and RY Cards									
		NSTPS		ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	1	2	LB	4	5	RB	7	8	
01	RTJEJD	3	0.035	0.035	0.035		2500	0.0080		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTUDVA	3	0.100	0.020	0.100		2600	0.0019		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTDIVA	15	0.035	0.035	0.035		5200	0.0015		Sta Elev	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0
01	RTVAUC	15	0.035	0.035	0.035		5200	0.0012		Sta Elev	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0
01	RTDIUA	7	0.100	0.020	0.100		5000	0.0014		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTUAU C	3	0.100	0.020	0.100		2400	0.0017		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTUCUB	4	0.035	0.035	0.035		1400	0.0043		Sta Elev	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0
01	RTUBSF	6	0.035	0.035	0.035		2000	0.0007		Sta Elev	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0
01	RTDITB	8	0.025	0.025	0.025		5200	0.0019		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTTBS F	2	0.100	0.020	0.100		2400	0.0023		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTSFS H	9	0.035	0.035	0.035		1200	0.0001		Sta Elev	0.0 5.5	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	600.0 5.5
01	RTSHSG	8	0.035	0.035	0.035		2600	0.0008		Sta Elev	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0
01	RTDITA	8	0.025	0.025	0.024		2600	0.0004		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTTAS G	2	0.025	0.025	0.025		2200	0.0050		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0

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Basin	Reach ID	NSTPS	RS Card						RC Card						RX and RY Cards							
			ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	1	2	LB	4	5	RB	7	8						
01	RTSGSE	2	0.035	0.035	0.035	1200	0.0030		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
								<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0						
01	RTSCSE	1	0.100	0.020	0.100	1000	0.0022		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTSERI	4	0.035	0.035	0.035	2000	0.0019		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
								<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0						
01	RTSFRJ	14	0.040	0.040	0.040	5300	0.0015		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
								<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0						
01	RTSHRJ	6	0.050	0.050	0.050	2000	0.0015		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
								<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0						
01	RTSGRJ	2	0.035	0.035	0.035	1400	0.0019		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
								<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0						
01	RTSERJ	9	0.035	0.035	0.035	1000	0.0001		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
								<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0						
01	RTRJRI	5	0.035	0.035	0.035	2600	0.0019		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
								<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0						
01	RTUEPB	7	0.025	0.025	0.025	4000	0.0015		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
								<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0						
01	RTPBNA	5	0.100	0.020	0.100	5000	0.0032		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTDINA	7	0.100	0.020	0.100	5000	0.0012		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTNAJC	4	0.100	0.020	0.100	5000	0.0028		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTDIJC	5	0.100	0.020	0.100	5000	0.0024		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						
01	RTJCFB	3	0.100	0.020	0.100	4200	0.0032		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
								<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7						

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Basin	Reach ID	NSTPS	RS Card						RC Card						RX and RY Cards							
			ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	1	2	LB	4	5	RB	7	8						
01	RTDIPA	5	0.100	0.020	0.100	5400	0.0032		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTRJP A	2	0.100	0.020	0.100	2400	0.0054		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTPAM H	4	0.100	0.020	0.100	2640	0.0012		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTMHM D	4	0.100	0.020	0.100	2640	0.0012		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTMGJ B	15	0.100	0.100	0.100	6200	0.0031		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
									<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0					
01	RTDIJB	7	0.100	0.020	0.100	5000	0.0015		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTJBF A	10	0.100	0.020	0.100	6000	0.0009		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTSDR I	3	0.035	0.035	0.035	2400	0.0046		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
									<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0					
01	RTRIR H	2	0.100	0.020	0.100	2400	0.0029		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTSAR H	3	0.100	0.020	0.100	2400	0.0015		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RRHOG 1	2	0.035	0.035	0.035	1200	0.0019		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
									<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0					
01	RRHOG 2	7	0.035	0.035	0.035	4100	0.0019		<b>Sta</b>	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0					
									<b>Elev</b>	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0					
01	RTRGR F	3	0.100	0.020	0.100	2700	0.0022		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTDIRF	8	0.100	0.020	0.100	5300	0.0011		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					

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Basin	Reach ID	NSTPS	RS Card						RC Card						RX and RY Cards							
			ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	1	2	LB	4	5	RB	7	8						
01	RTRFO G	3	0.100	0.020	0.100	2700	0.0022		<b>Sta Elev</b>	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7					
01	RTOGO F	3	0.035	0.035	0.035	2400	0.0033		<b>Sta Elev</b>	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	500.0 5.0					
01	RTDIR E	5	0.100	0.020	0.100	2600	0.0008		<b>Sta Elev</b>	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7					
01	RTREO F	11	0.100	0.100	0.100	2700	0.0044		<b>Sta Elev</b>	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0					
01	RTOFO B	9	0.035	0.035	0.035	3600	0.0011		<b>Sta Elev</b>	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0					
01	RTRDR C	6	0.100	0.020	0.100	5200	0.0023		<b>Sta Elev</b>	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7					
01	RTRCR B	4	0.100	0.020	0.100	5200	0.0042		<b>Sta Elev</b>	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7					
01	RTRBR A	13	0.100	0.020	0.100	2440	0.0001		<b>Sta Elev</b>	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7					
01	RTDIO B	11	0.100	0.020	0.100	5600	0.0007		<b>Sta Elev</b>	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7					
01	RTOBL E	7	0.035	0.035	0.035	2600	0.0008		<b>Sta Elev</b>	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0					
01	RTLEK D	8	0.035	0.035	0.035	2600	0.0008		<b>Sta Elev</b>	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0					
01	RKDKA 1	4	0.035	0.035	0.035	2000	0.0020		<b>Sta Elev</b>	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0					
01	RKDKA 2	10	0.035	0.035	0.035	5000	0.0020		<b>Sta Elev</b>	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0					
01	RTDIKA	15	0.100	0.100	0.100	5500	0.0050		<b>Sta Elev</b>	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0					

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Basin	Reach ID	NSTPS	RS Card						RC Card						RX and RY Cards							
			ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	1	2	LB	4	5	RB	7	8						
01	RTDIKA	15	0.100	0.100	0.100	5000	0.0050		<b>Sta</b>	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0					
									<b>Elev</b>	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0					
01	RTDIO E	7	0.100	0.020	0.100	5000	0.0013		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTOEM F	6	0.100	0.020	0.100	5200	0.0021		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTMDM F	7	0.100	0.020	0.100	5200	0.0015		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTMFM C	7	0.100	0.020	0.100	5200	0.0015		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTDIO D	4	0.100	0.020	0.100	2700	0.0013		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTDIO D	8	0.100	0.020	0.100	5500	0.0013		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTODM C	6	0.100	0.020	0.100	5200	0.0023		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTMCIE	2	0.100	0.020	0.100	2000	0.0030		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTDIO C	7	0.100	0.020	0.100	4000	0.0010		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTOCM B	4	0.100	0.020	0.100	5200	0.0038		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTDIM B	6	0.100	0.020	0.100	5200	0.0023		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTMBIB	3	0.100	0.020	0.100	2600	0.0015		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					
01	RTMEIA	3	0.100	0.020	0.100	3400	0.0034		<b>Sta</b>	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0					
									<b>Elev</b>	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7					

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Basin	Reach ID	RS Card		RC Card					RX and RY Cards									
		NSTPS		ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	1	2	LB	4	5	RB	7	8	
01	RTDILD	4	0.025	0.025	0.025		2500	0.0016		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTLDMA	3	0.025	0.025	0.025		2600	0.0035		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTMAHB	2	0.100	0.020	0.100		4000	0.0071		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTEDI D	13	0.100	0.020	0.100		5000	0.0004		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTIDIC	11	0.035	0.035	0.035		5200	0.0015		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTICDA	3	0.100	0.020	0.100		5200	0.0054		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTDIEE	10	0.100	0.020	0.100		7500	0.0015		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTEEA	15	0.035	0.035	0.035		5300	0.0030		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTEAD C	13	0.100	0.020	0.100		5000	0.0013		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTDCC C	13	0.100	0.020	0.100		5200	0.0015		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTDDC C	7	0.035	0.035	0.035		5000	0.0040		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTLBHA	13	0.100	0.100	0.100		4000	0.0065		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTHAGD	15	0.100	0.100	0.100		4800	0.0029		Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTKCG D	4	0.100	0.020	0.100		5200	0.0043		Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7

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Basin	Reach ID	RS Card		RC Card					RX and RY Cards									
		NSTPS		ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	1	2	LB	4	5	RB	7	8	
01	RTGCG D	3	0.100	0.020	0.100	2400	0.0017			Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTGDC B	3	0.100	0.020	0.100	2000	0.0010			Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTGBC A	5	0.100	0.020	0.100	4500	0.0021			Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTLCL A	4	0.100	0.020	0.100	5000	0.0044			Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTDILA	7	0.025	0.025	0.025	4000	0.0016			Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	524.0 1.0	900.0 4.0	1000.0 5.0
01	RTLAK B	2	0.100	0.020	0.100	3500	0.0071			Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTDIKB	13	0.100	0.100	0.100	3500	0.0050			Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTBBB A	8	0.100	0.020	0.100	7500	0.0023			Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTBAA A	11	0.100	0.100	0.100	2000	0.0013			Sta Elev	0.0 5.0	100.0 4.0	400.0 1.0	500.0 0.0	500.1 0.0	600.0 1.0	900.0 4.0	1000.0 5.0
01	RTDIQ D	5	0.100	0.020	0.100	5000	0.0030			Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTRJ3	7	0.035	0.035	0.035	3900	0.0015			Sta Elev	0.0 5.0	20.0 5.0	35.0 2.5	50.0 0.0	50.1 0.0	250.0 2.0	450.0 4.0	550.0 5.0
01	RTCCC B	4	0.100	0.020	0.100	5122	0.0018			Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7
01	RTUCP C	3	0.100	0.020	0.100	3000	0.0038			Sta Elev	0.0 4.7	470.0 0.0	476.0 0.0	480.0 1.0	520.0 1.0	524.0 0.0	530.0 0.0	1000.0 4.7



Reach ID	Q	Channel Type	Area	Perimeter	Velocity	NSTPS		
						new	old	diff
RTwdxA	353	A	256	320	2.05	4	4	0
RTxawC	484	C	136	170	1.46	12	9	3
RTwbwC	750	A	400	400	2.66	3	3	0
RTwcwA	RAS	RAS	0	0	0.55	15	9	6
RTvdwA	726	B	476	460	4.16	2	3	-1
RTwawC	RAS	RAS	0	0	0.38	15	8	7
RTvbvC	1076	B	678	541	3.56	2	4	-2
RTvcqA	918	B	476	460	4.16	4	3	1
RTqajH	647	A	400	400	0.83	11	10	1
RTdiqe	0	A	256	320	2.81	8	11	-3
RTqeQC	1046	A	576	480	3.49	3	5	-2
RDIQD	240	C	136	170	1.79	10	8	2
RTqdQC	220	B	308	380	4.09	2	3	-1
RTqcJi	260	A	256	320	0.68	15	22	-7
RTdiqb	44	C	136	170	0.68	12	4	8
RTqbjh	419	A	256	320	0.68	15	19	-4
RTdipf	433	C	136	170	0.82	11	3	8
RTPfjf	444	C	136	170	2.31	6	13	-7
Rtpejf	792	B	476	460	4.56	2	15	-13
RtpcnB	36	B	308	380	3.98	4	8	-4
RTnbjd	184	B	308	380	4.75	4	8	-4
RTjdFc	508	B	476	460	5.53	2	5	-3
Rtpdnc	31	A	256	320	1.90	5	5	0
RTncje	311	A	256	320	1.37	12	8	4
RTjeFc	427	A	256	320	3.27	4	4	0
RTudva	462	B	308	380	2.82	3	4	-1
RTdiva	RAS	RAS	0	0	0.46	15	9	6
RTvauc	RAS	RAS	0	0	0.69	15	9	6
RTdiua	142	B	308	380	2.42	7	8	-1
RTuauc	384	B	308	380	2.66	3	4	-1
RTucub	RAS	RAS	0	0	1.26	4	2	2
RTubsf	678	C	240	241	1.12	6	5	1
RTditb	97	A	256	320	2.23	8	9	-1
RTtbsf	552	B	476	460	3.65	2	4	-2
RTsfsH	838	C	240	241	0.42	9	1	8
RTshsg	124	C	136	170	1.03	8	2	6
RTdita	170	A	256	320	1.02	8	4	4
RTtasg	284	A	256	320	3.62	2	3	-1
RTsgse	82	C	136	170	2.00	2	2	0
RTscse	90	B	308	380	3.03	1	3	-2
RTseri	0	A	256	320	1.59	4	5	-1
RTsfrj	370	C	136	170	1.24	14	7	7
RTshrj	681	C	240	241	1.15	6	7	-1
RTsgrj	1199	C	305	255	2.09	2	4	-2
RTserj	146	C	136	170	0.37	9	2	7

Reach ID	Q	Channel Type	Area	Perimeter	Velocity	NSTPS		
RTRJRI	912	C	240	241	1.85	<b>5</b>	4	1
RTUEPB	0	A	256	320	1.98	<b>7</b>	7	0
RTPBNA	245	B	308	380	3.65	<b>5</b>	8	-3
RTDINA	170	B	308	380	2.24	<b>7</b>	8	-1
RTNAJC	710	B	476	460	4.02	<b>4</b>	8	-4
RTDIJC	179	B	308	380	3.16	<b>5</b>	8	-3
RTJCFB	517	B	476	460	4.30	<b>3</b>	7	-4
RTDIPA	36	B	308	380	3.65	<b>5</b>	8	-3
RTRJPA	268	B	308	380	4.75	<b>2</b>	4	-2
RTPAMH	287	B	308	380	2.24	<b>4</b>	9	-5
RTMGJB	212	A	256	320	0.71	<b>15</b>	12	3
RTDIJB	425	B	308	380	2.50	<b>7</b>	9	-2
RTJBFA	338	B	308	380	1.94	<b>10</b>	11	-1
RTSDRI	307	A	256	320	2.48	<b>3</b>	4	-1
RTRIRH	702	B	476	460	4.09	<b>2</b>	4	-2
RTSARH	181	B	308	380	2.50	<b>3</b>	4	-1
RRHOG1	718	C	240	241	1.85	<b>2</b>	9	-7
RRHOG2	713	C	240	241	1.85	<b>7</b>	9	-2
RTRGRF	112	B	308	380	3.03	<b>3</b>	5	-2
RTDIRF	106	B	308	380	2.14	<b>8</b>	9	-1
RTRFOG	434	B	308	380	3.03	<b>3</b>	5	-2
RTOGOF	814	C	240	241	2.43	<b>3</b>	4	-1
RTDIRE	71	B	308	380	1.83	<b>5</b>	4	1
RTREOF	232	A	256	320	0.85	<b>11</b>	5	6
RTOFOB	924	C	240	241	1.40	<b>9</b>	6	3
RTRDRC	90	B	308	380	3.10	<b>6</b>	9	-3
RTRCRB	255	B	308	380	4.19	<b>4</b>	9	-5
RTRBRA	93	B	308	380	0.65	<b>13</b>	4	9
RTDIOB	33	B	308	380	1.71	<b>11</b>	9	2
RTOBLE	662	C	240	241	1.20	<b>7</b>	4	3
RTLEKD	458	C	136	170	1.03	<b>8</b>	4	4
RKDKA1	456	C	136	170	1.64	<b>4</b>	13	-9
RKDKA2	217	C	136	170	1.64	<b>10</b>	13	-3
RTDIKA	126	A	256	320	0.91	<b>15</b>	11	4
RTDIKA	126	A	256	320	0.91	<b>15</b>	11	4
RTDIOE	32	B	308	380	2.33	<b>7</b>	9	-2
RTOEMF	200	B	308	380	2.96	<b>6</b>	9	-3
RTMDMF	197	B	308	380	2.50	<b>7</b>	9	-2
RTMFMF	247	B	308	380	2.50	<b>7</b>	9	-2
RTDIOD	32	B	308	380	2.33	<b>4</b>	9	-5
RTDIOD	32	B	308	380	2.33	<b>8</b>	9	-1
RTODMC	375	B	308	380	3.10	<b>6</b>	9	-3
RTMCIE	419	B	308	380	3.54	<b>2</b>	3	-1
RTDIOC	65	B	308	380	2.04	<b>7</b>	7	0
RTDIMB	244	B	308	380	3.10	<b>6</b>	9	-3
RTOCMB	268	B	308	380	3.98	<b>4</b>	9	-5

Reach ID	Q	Channel Type	Area	Perimeter	Velocity	NSTPS			
						3	4	6	-1
RTMBIB	675	B	476	460	2.94	3	4	6	-1
RTMEIA	131	B	308	380	3.77	3	6	6	-3
RTDILD	201	A	256	320	2.05	4	4	4	0
RTLDMA	285	A	256	320	3.03	3	4	4	-1
RTMAHB	293	B	308	380	5.44	2	6	6	-4
RTEIDID	297	B	308	380	1.29	13	9	9	4
RTIDIC	998	A	400	400	1.64	11	10	10	1
RTICDA	998	B	476	460	5.59	3	9	9	-6
RTDIEE	202	A	256	320	2.48	10	14	14	-4
RTEEEA	RAS	RAS	0	0	0.99	15	9	9	6
RTEADC	RAS	RAS	0	0	1.26	13	9	9	4
RTDCCC	RAS	RAS	0	0	1.29	13	9	9	4
RTDDCC	76	A	256	320	2.31	7	10	10	-3
RTLBHA	85	A	256	320	1.03	13	7	7	6
RTHAGD	73	A	256	320	0.69	15	8	8	7
RTKCGD	78	B	308	380	4.24	4	9	9	-5
RTGCGD	129	B	308	380	2.66	3	4	4	-1
RTGDCB	572	B	476	460	2.40	3	7	7	-4
RTGBCA	96	B	308	380	2.96	5	9	9	-4
RTLCLA	2	B	308	380	4.28	4	5	5	-1
RTDILA	119	A	256	320	2.05	7	4	4	3
RTLAKB	120	B	308	380	5.44	2	4	4	-2
RTDIKB	420	A	256	320	0.91	13	11	11	2
RTBBBA	93	B	308	380	3.10	8	9	9	-1
RTBAAA	1334	A	576	480	0.61	11	5	5	6
RTDIQD	240	B	308	380	3.54	5	3	3	2
RTRJ3	1029	C	305	255	1.85	7	7	7	0
RTCCCB	RAS	RAS	0	0	4.06	4	10	10	-6
RTJHJI	1093	A	576	480	0.93	14	10	10	4
RTJFJG	868	B	476	460	4.56	4	15	15	-11
RTJEJD	461	A	256	320	3.27	3	4	4	-1
RTMHMD	298	B	308	380	2.24	4	9	9	-5
RTUCPC	55	B	308	380	3.98	3	8	8	-5
RTEBIE	RAS	RAS	0	0	2.60	8			
RTIEIB	RAS	RAS	0	0	3.52	5			
RTIBIA	RAS	RAS	0	0	3.96	3			
RTIAHB	RAS	RAS	0	0	5.92	2			
RTHBDA	RAS	RAS	0	0	2.93	2			
RTDACC	RAS	RAS	0	0	2.08	6			
RTCBCA	RAS	RAS	0	0	3.69	5			
RTCABC	RAS	RAS	0	0	1.80	11	11		

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***Appendix E***  
***Level-Pool***  
***Storage Routing Data***

## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

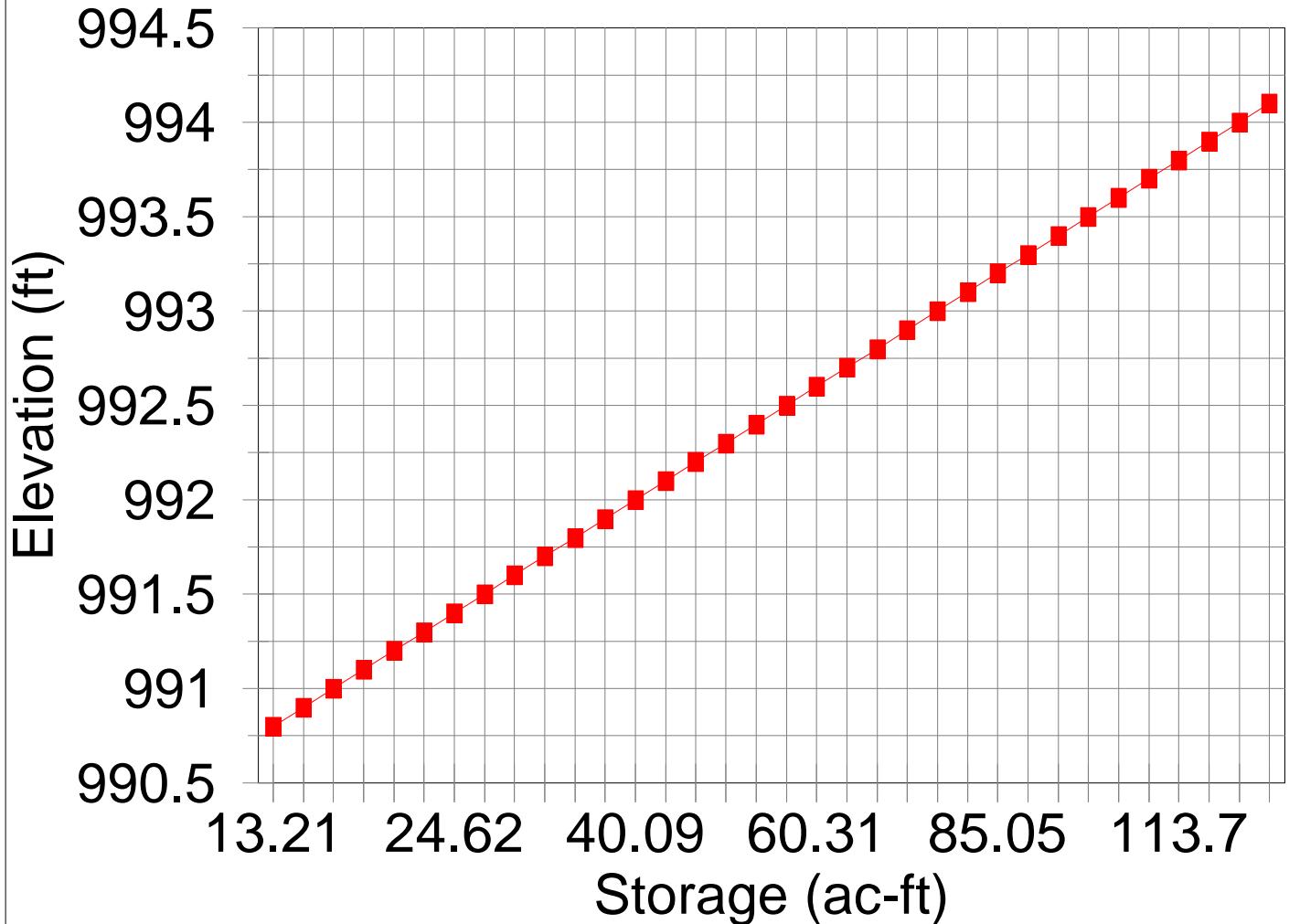
Basin: OB Map: 247

Stage (ft)	Storage (ac-ft)	Weir eq. Discharge (cfs)			Backwater (HEC-RAS) Rating Curve	
		107th Ave	SPRR	Total	Stage (ft)	Discharge (cfs)
990.8	13.21	0	0	0		
990.9	14.85	2	0	2		
991.0	16.62	11	0	11		
991.1	18.49	29	0	29		
991.2	20.44	60	0	60		
991.3	22.49	106	0	106		
991.4	24.62	167	0	167		
991.5	26.84	244	0	244	991.5	0
991.6	29.19	338	0	338		
991.7	31.72	448	0	448		
991.8	34.4	577	0	577		
991.9	37.19	724	0	724		
992.0	40.09	890	0	890		
992.1	43.1	1076	0	1076		
992.2	46.24	1283	0	1283		
992.3	49.54	1509	0	1509		
992.4	53	1757	0	1757		
992.5	56.59	2025	0	2025		
992.6	60.31	2316	0	2316		
992.7	64.14	2627	0	2627		
992.8	68.09	2960	0	2960		
992.9	72.15	3316	0	3316		
993.0	76.34	3697	0	3697		
993.1	80.65	4101	0	4101	993.1	50
993.2	85.05	4530	0	4530	993.2	100
993.3	89.54	4987	0	4987		
993.4	94.14	5476	0	5476		
993.5	98.86	5994	0	5994		
993.6	103.7	6542	0	6542		
993.7	108.65	7119	0	7119	993.7	500
993.8	113.7	7726	0	7726		
993.9	118.85	8361	0	8361	993.9	750
994.0	124.08	9028	0	9028		
994.1	124.08	9726	1	9727	994.1	1000

Backwater rating curve from HEC-RAS governs due to weir inundation

# Stage-Storage Relationship

Basin:OB Map:247



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

Basin: OF

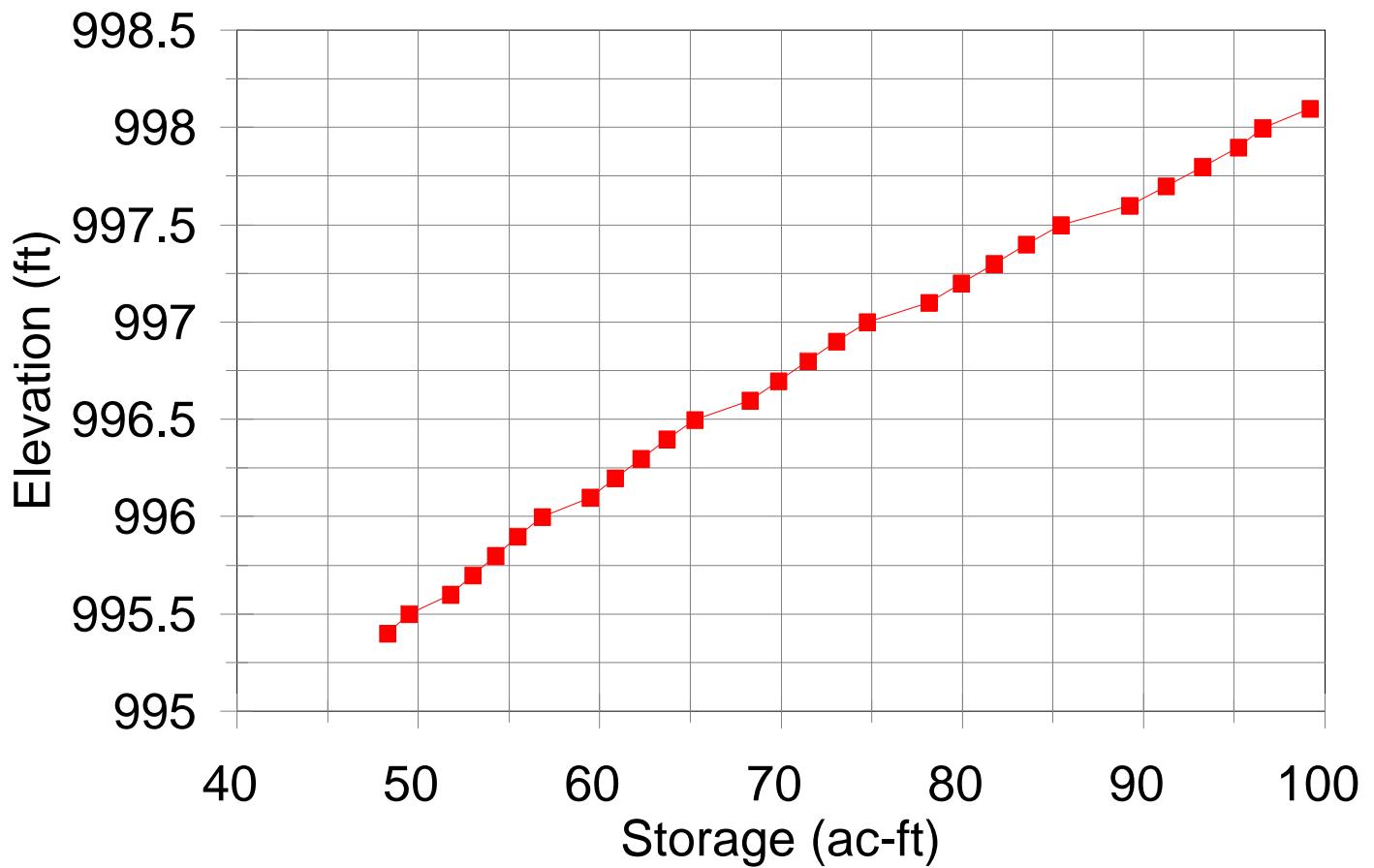
Map: 233

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			Backwater (HEC-RAS)	
		103rd	SPRR	Total	Rating Curve	Stage (ft)
995.4	48.3	0		0		
995.5	49.5	2		2		
995.6	51.8	11		11		
995.7	53.0	30		30		
995.8	54.3	61		61		
995.9	55.5	108		108		
996.0	56.8	171		171	996.0	50
996.1	59.5	251		251		
996.2	60.9	347		347		
996.3	62.3	455		455		
996.4	63.7	574		574		
996.5	65.2	706		706	996.5	100
996.6	68.3	851		851		
996.7	69.9	1007		1007		
996.8	71.5	1174		1174		
996.9	73.1	1353		1353		
997.0	74.8	1543		1543		
997.1	78.2	1745		1745		
997.2	80.0	1959		1959		
997.3	81.8	2184		2184	997.3	500
997.4	83.6	2421		2421		
997.5	85.5	2670		2670	997.5	750
997.6	89.3	2931		2931	997.6	1000
997.7	91.3	3204		3204		
997.8	93.3	3489		3489		
997.9	95.3	3786		3786		
998.0	96.6	4096		4096		
998.1	99.2	4418		4418		
998.2	99.2	4754		4754		
998.3	99.2	5106		5106		
998.4	99.2	5475		5475		
998.5	99.2	5860		5860		
998.6	99.2	6263		6263		
998.7	99.2	6685		6685		
998.8	99.2	7125		7125		
998.9	99.2	7586		7586		
999.0	99.2	8066		8066		
999.1	99.2	8566		8566		
999.2	99.2	9087		9087		
999.3	99.2	9629		9629		
999.4	99.2	10193		10193		
999.5	99.2	10779		10779		
999.6	99.2	11387		11387		
999.7	99.2	12019	0	12019		
999.8	99.2	12673	10	12682		
999.9	99.2	13350	62	13412		
1000.0	99.2	14051	164	14215		

Backwater rating curve from HEC-RAS governs due to weir inundation

# Stage-Storage Relationship

Basin:OF Map:233



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

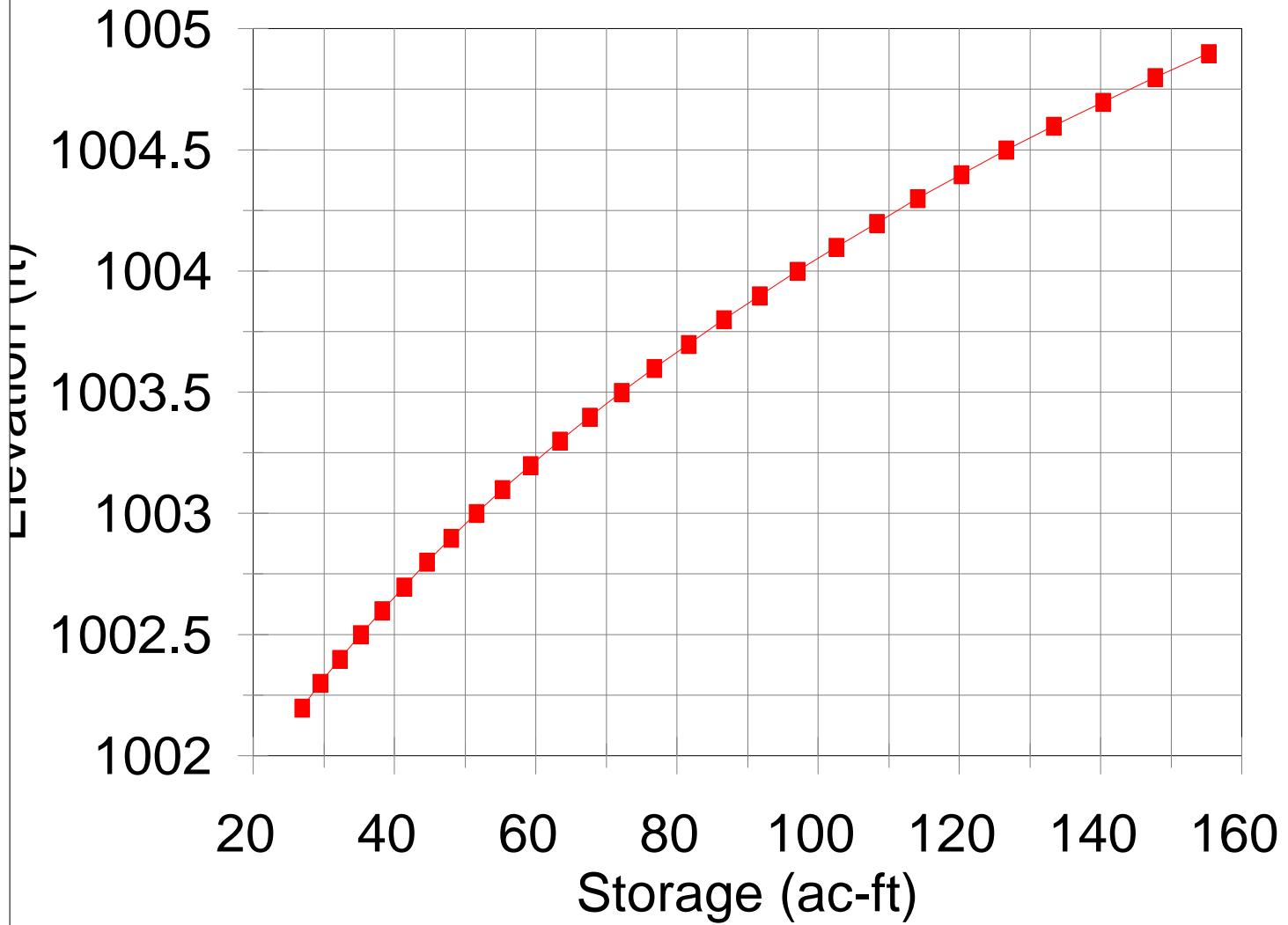
Basin: OG

Map: 234

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		99th	SPRR	Total	
1002.2	26.97	0	0	0	
1002.3	29.57	3	1	4	
1002.4	32.33	19	4	23	
1002.5	35.22	57	11	68	
1002.6	38.25	122	22	143	
1002.7	41.4	211	40	251	
1002.8	44.66	329	82	412	
1002.9	48.04	481	153	634	
1003	51.62	672	250	922	
1003.1	55.37	901	376	1278	
1003.2	59.3	1166	532	1698	
1003.3	63.43	1466	717	2183	
1003.4	67.7	1803	930	2734	
1003.5	72.18	2172	1174	3346	
1003.6	76.84	2572	1447	4019	
1003.7	81.67	3000	1752	4752	
1003.8	86.66	3455	2090	5545	
1003.9	91.79	3936	2463	6399	
1004	97.09	4444	2870	7315	
1004.1	102.59	4978	3314	8292	
1004.2	108.3	5537	3793	9330	
1004.3	114.18	6121	4305	10427	
1004.4	120.31	6730	4855	11585	
1004.5	126.71	7365	5440	12805	
1004.6	133.42	8025	6061	14087	
1004.7	140.46	8714	6718	15432	
1004.8	147.81	9431	7408	16839	
1004.9	155.36	10178	8134	18312	

# Stage-Storage Relationship

Basin:OG Map:234



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

Basin: RH

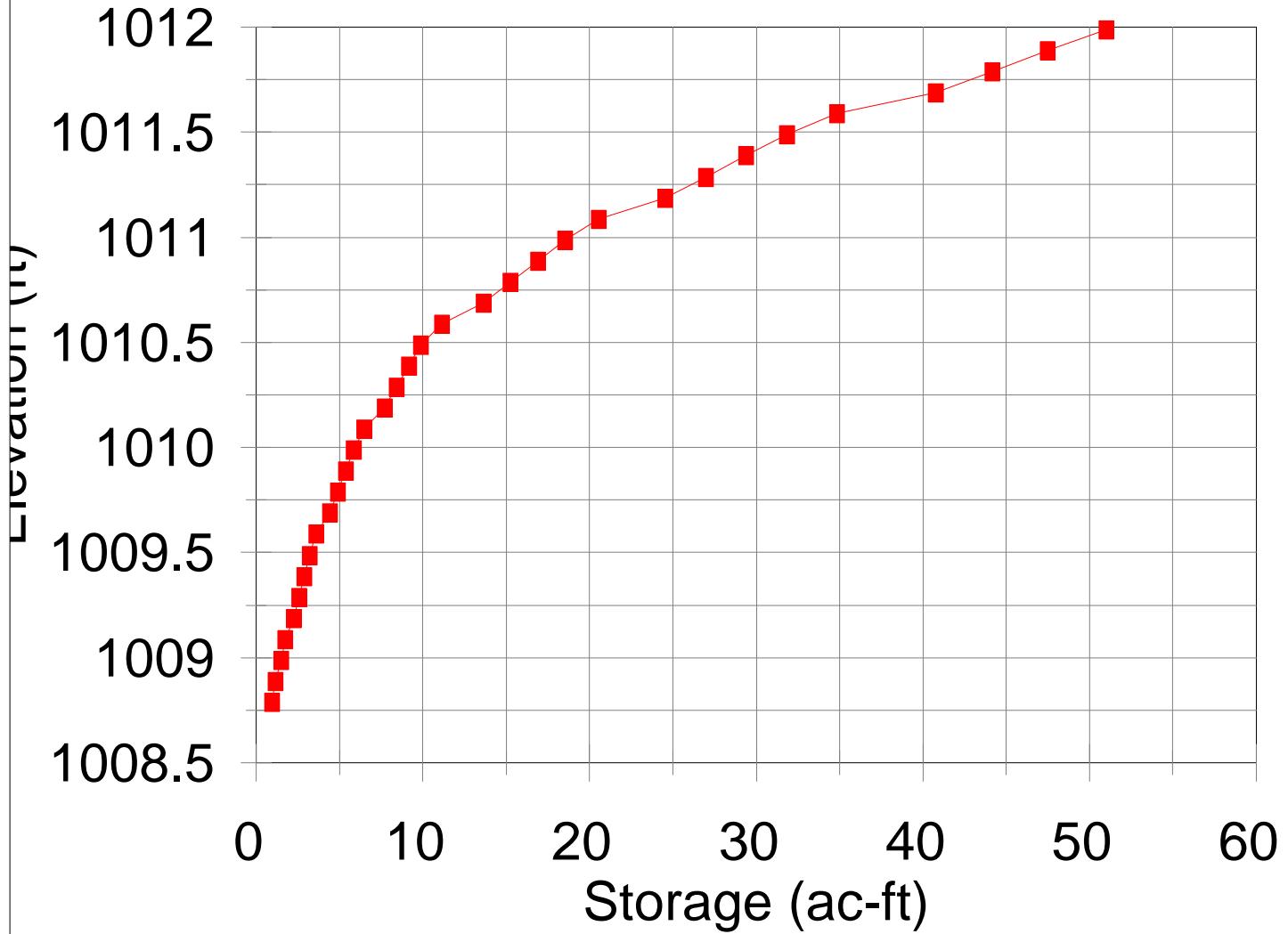
Map: 235

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			Backwater (HEC-RAS)	
		91st	SPRR	Total	Rating Curve	Stage (ft)
1008.8	1.0	0		0		
1008.9	1.2	5		5		
1009.0	1.5	27		27		
1009.1	1.8	76		76		
1009.2	2.3	160		160		
1009.3	2.6	281		281	1009.3	50
1009.4	2.9	439		439	1009.4	100
1009.5	3.2	634		634		
1009.6	3.6	866		866		
1009.7	4.4	1141		1141	1009.7	500
1009.8	4.9	1456		1456		
1009.9	5.4	1809		1809	1009.9	750
1010.0	5.9	2197		2197	1010.0	1000
1010.1	6.5	2619		2619		
1010.2	7.7	3071		3071		
1010.3	8.4	3552		3552		
1010.4	9.2	4059		4059		
1010.5	9.9	4592		4592		
1010.6	11.2	5150		5150		
1010.7	13.6	5733		5733		
1010.8	15.3	6339		6339		
1010.9	16.9	6969		6969		
1011.0	18.6	7623		7623		
1011.1	20.6	8301		8301		
1011.2	24.5	9002	0	9002		
1011.3	27.0	9726	11	9737		
1011.4	29.4	10474	45	10519		
1011.5	31.9	11244	106	11350		
1011.6	34.8	12035	199	12234		
1011.7	40.8	12846	322	13168		
1011.8	44.2	13676	473	14149		
1011.9	47.5	14526	652	15177		
1012.0	51.0	15394	858	16251		

Backwater rating curve from HEC-RAS governs due to weir inundation

# Stage-Storage Relationship

Basin:RH Map:235



**SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP**

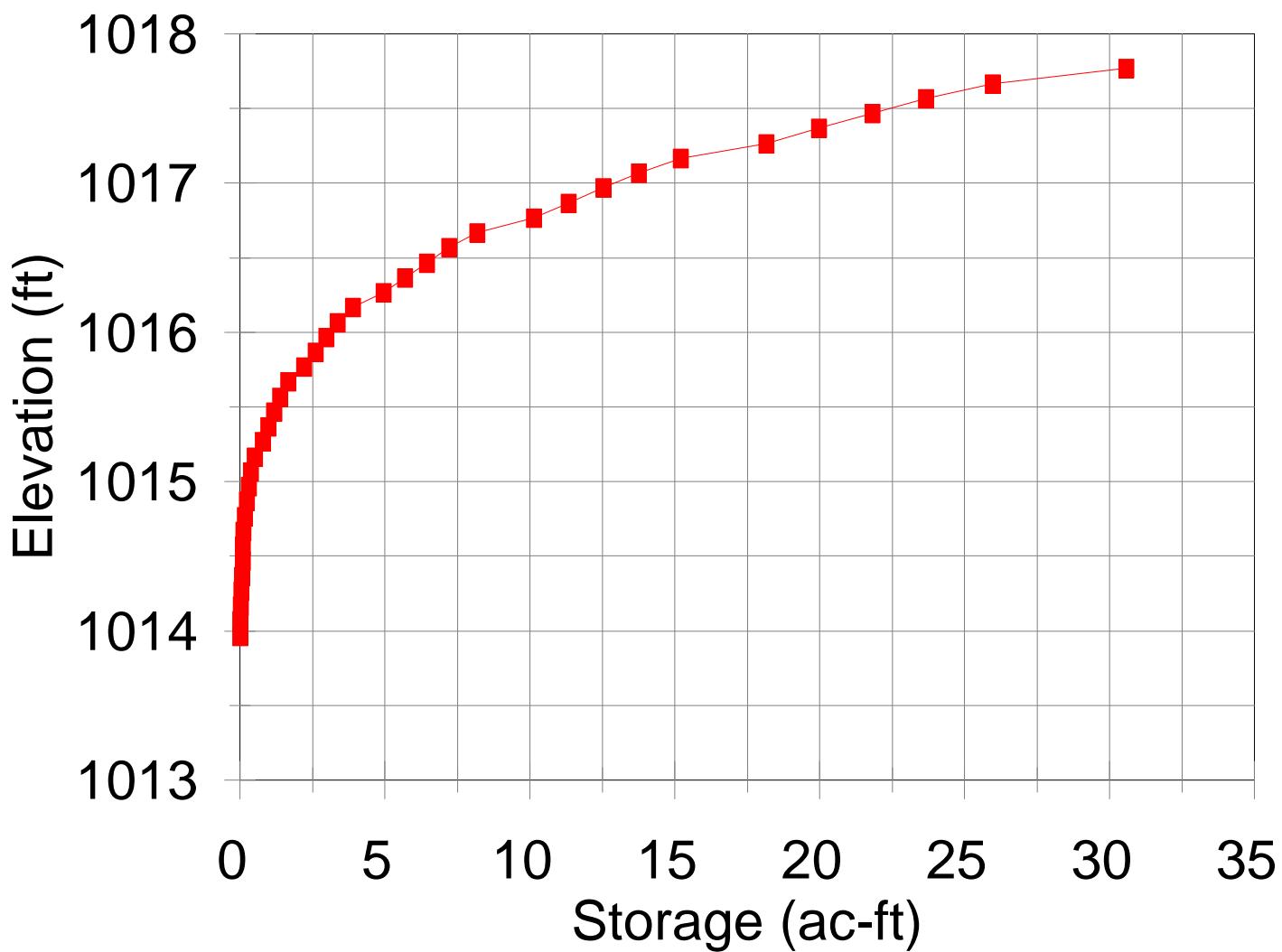
Basin: RI

Map: 235

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		Dirt Road	SPRR	Total	
1014.0	0.0	0		0	
1014.1	0.0	4		4	
1014.2	0.0	21		21	
1014.3	0.1	50		50	
1014.4	0.1	90		90	
1014.5	0.1	142		142	
1014.6	0.1	206		206	
1014.7	0.1	282		282	
1014.8	0.2	369		369	
1014.9	0.2	466		466	
1015.0	0.3	573		573	
1015.1	0.4	690		690	
1015.2	0.5	818		818	
1015.3	0.8	957		957	
1015.4	1.0	1115		1115	
1015.5	1.2	1333		1333	
1015.6	1.4	1620		1620	
1015.7	1.7	1957		1957	
1015.8	2.2	2339		2339	
1015.9	2.6	2760		2760	
1016.0	3.0	3217		3217	
1016.1	3.4	3706		3706	
1016.2	3.9	4227		4227	
1016.3	5.0	4778		4778	
1016.4	5.7	5355		5355	
1016.5	6.5	5957		5957	
1016.6	7.2	6583		6583	
1016.7	8.2	7232		7232	
1016.8	10.1	7904	0	7904	
1016.9	11.3	8598	1	8599	
1017.0	12.6	9313	5	9319	
1017.1	13.8	10049	15	10064	
1017.2	15.2	10805	30	10836	
1017.3	18.2	11581	56	11637	
1017.4	20.0	12375	97	12473	
1017.5	21.8	13188	154	13343	
1017.6	23.7	14020	227	14247	
1017.7	26.0	14869	317	15186	
1017.8	30.6	15736	423	16159	

# Stage-Storage Relationship

Basin:RI Map:235



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

Basin: RJ

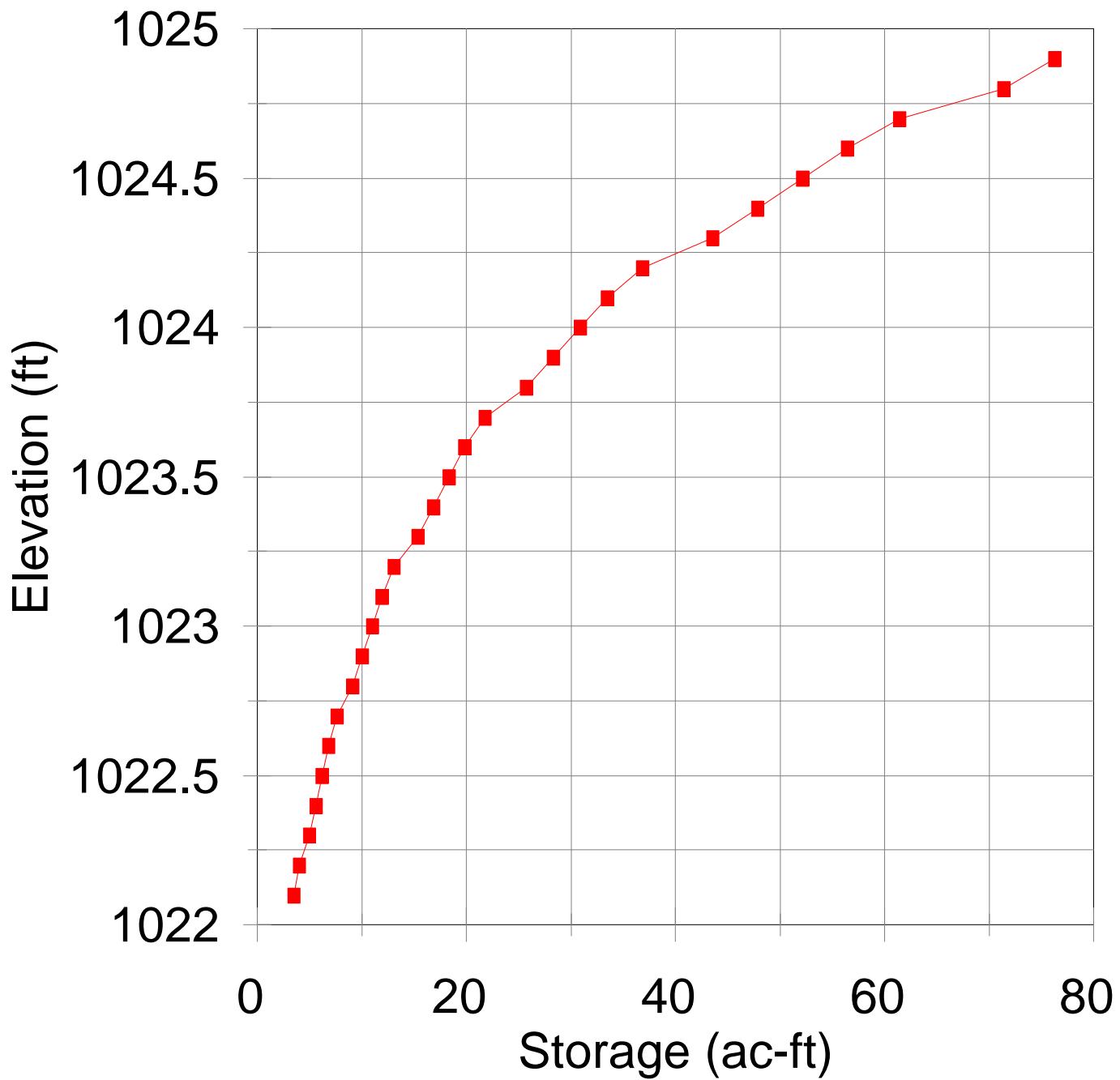
Map: 236

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			Backwater (HEC-RAS)	
		83rd	SPRR	Total	Rating Curve	Stage (ft)
1022.1	3.5	0	0	0		
1022.2	4.0	0	0	0		
1022.3	5.0	6	6	6		
1022.4	5.6	31	31	31		
1022.5	6.2	72	72	72		
1022.6	6.9	128	128	128		
1022.7	7.6	202	202	202	1022.7	50
1022.8	9.2	293	293	293		
1022.9	10.1	402	402	402	1022.9	100
1023.0	11.0	531	0	531		
1023.1	11.9	680	2	682		
1023.2	13.1	850	11	861		
1023.3	15.4	1041	30	1071		
1023.4	16.9	1254	62	1316		
1023.5	18.4	1490	108	1598		
1023.6	19.8	1751	172	1923		
1023.7	21.8	2046	255	2301	1023.7	500
1023.8	25.8	2368	358	2727		
1023.9	28.3	2716	485	3201		
1024.0	30.9	3089	635	3724	1024.0	750
1024.1	33.5	3485	813	4299		
1024.2	36.9	3905	1021	4926	1024.2	1000
1024.3	43.6	4347	1263	5610		
1024.4	47.9	4811	1538	6349		
1024.5	52.2	5299	1848	7147		
1024.6	56.5	5809	2190	7999		
1024.7	61.5	6341	2565	8907		
1024.8	71.4	6897	2979	9875		
1024.9	76.3	7474	3430	10904		

Backwater rating curve from HEC-RAS governs due to weir inundation

# Stage-Storage Relationship

Basin:RJ Map:236



**SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP**

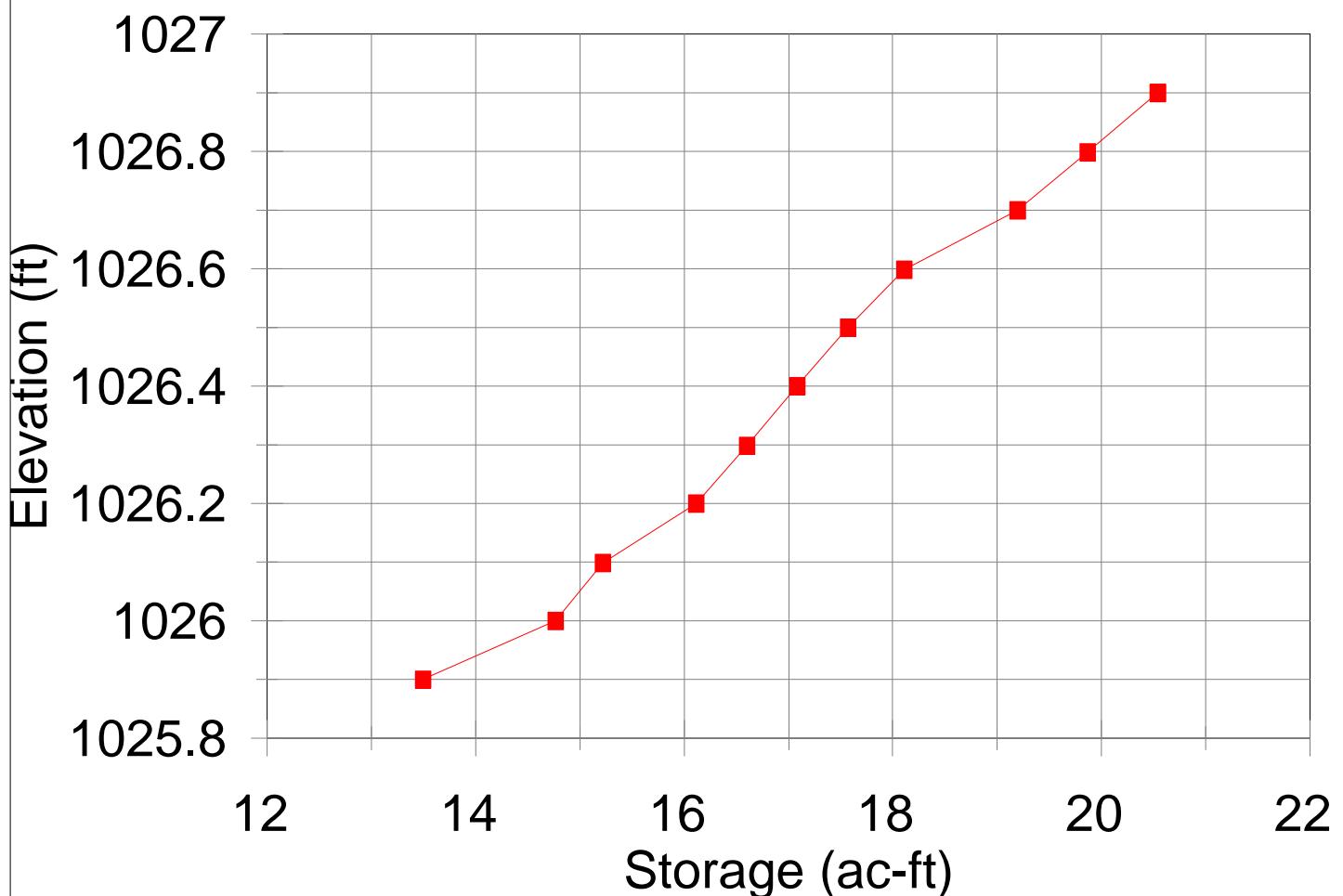
Basin: SE

Map: 236

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	83rd	Total	
1025.9	13.5	3.14	0	3.14	
1026	14.8	14.3	0	14.3	
1026.1	15.2	35.54	0	35.54	
1026.2	16.1	72.17	0	72.17	
1026.3	16.6	141.93	0	141.93	
1026.4	17.1	274.22	0	274.22	
1026.5	17.6	479.44	0	479.44	
1026.6	18.1	754.7	0	754.7	
1026.7	19.2	1009.63	0	1009.63	
1026.8	19.9	1515.23	0	1515.23	
1026.9	20.5	2013.01	0	2013.01	

# Stage-Storage Relationship

Basin:SE Map:236



**SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP**

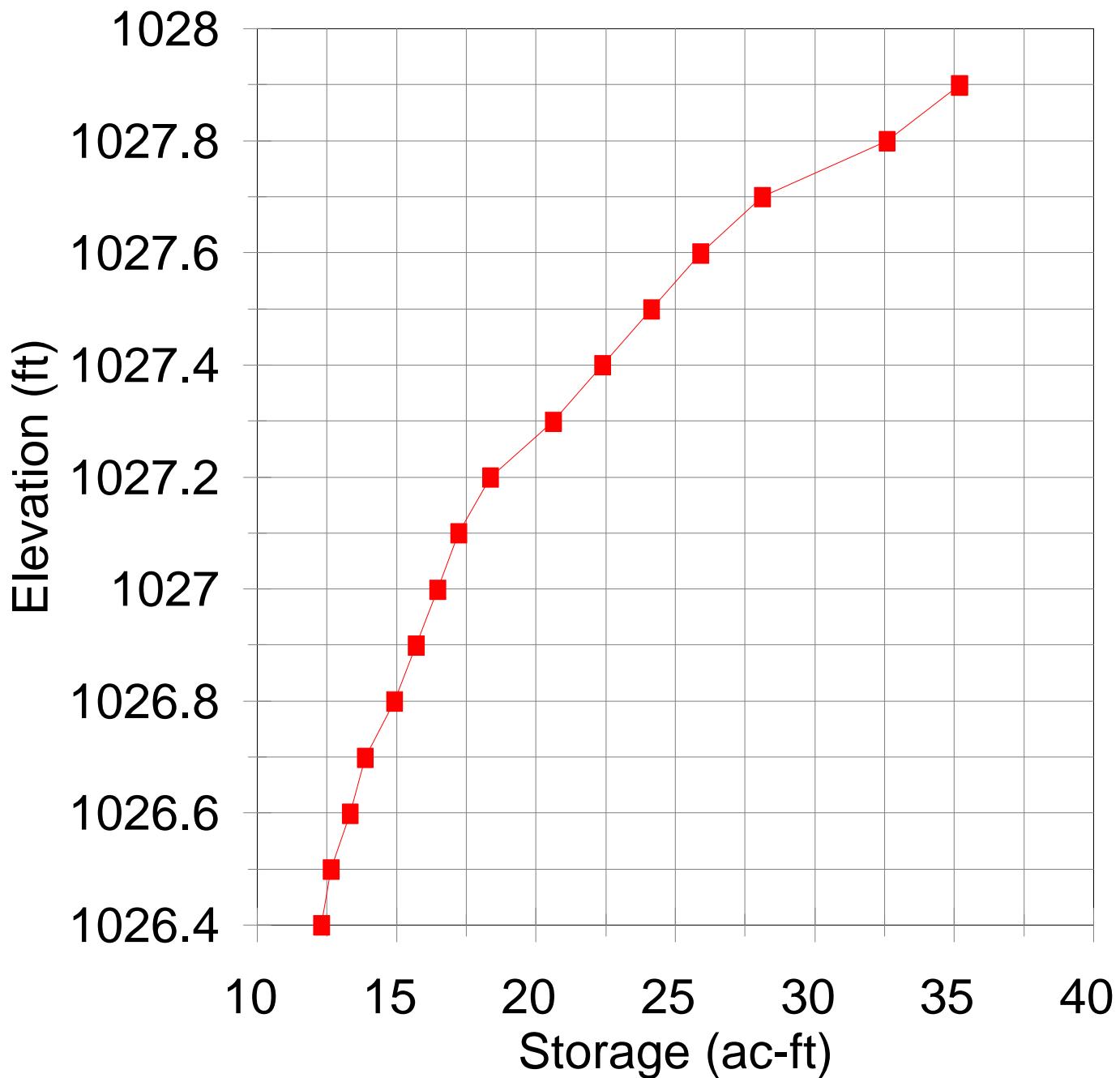
Basin: SG

Map: 236

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	81st	Total	
1026.4	12.3	0	0	0	
1026.5	12.7	0	1.36	1.36	
1026.6	13.3	1.29	7.72	9.01	
1026.7	13.9	19.65	21.44	41.09	
1026.8	14.9	70.12	44.34	114.46	
1026.9	15.7	197.77	78.4	276.17	
1027.0	16.5	399.74	125.45	525.19	
1027.1	17.2	657.28	185.49	842.77	
1027.2	18.4	964.06	257.01	1221.07	
1027.3	20.6	1316.01	339.61	1655.62	
1027.4	22.4	1709.1	433.76	2142.86	
1027.5	24.1	2143.52	539.49	2683.01	
1027.6	25.9	2618.68	657.15	3275.83	
1027.7	28.1	3132.76	786.17	3918.93	
1027.8	32.6	3681.87	927.01	4608.88	
1027.9	35.2	4261.98	1080.69	5342.67	

# Stage-Storage Relationship

Basin:SG Map:236



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

Basin: SH

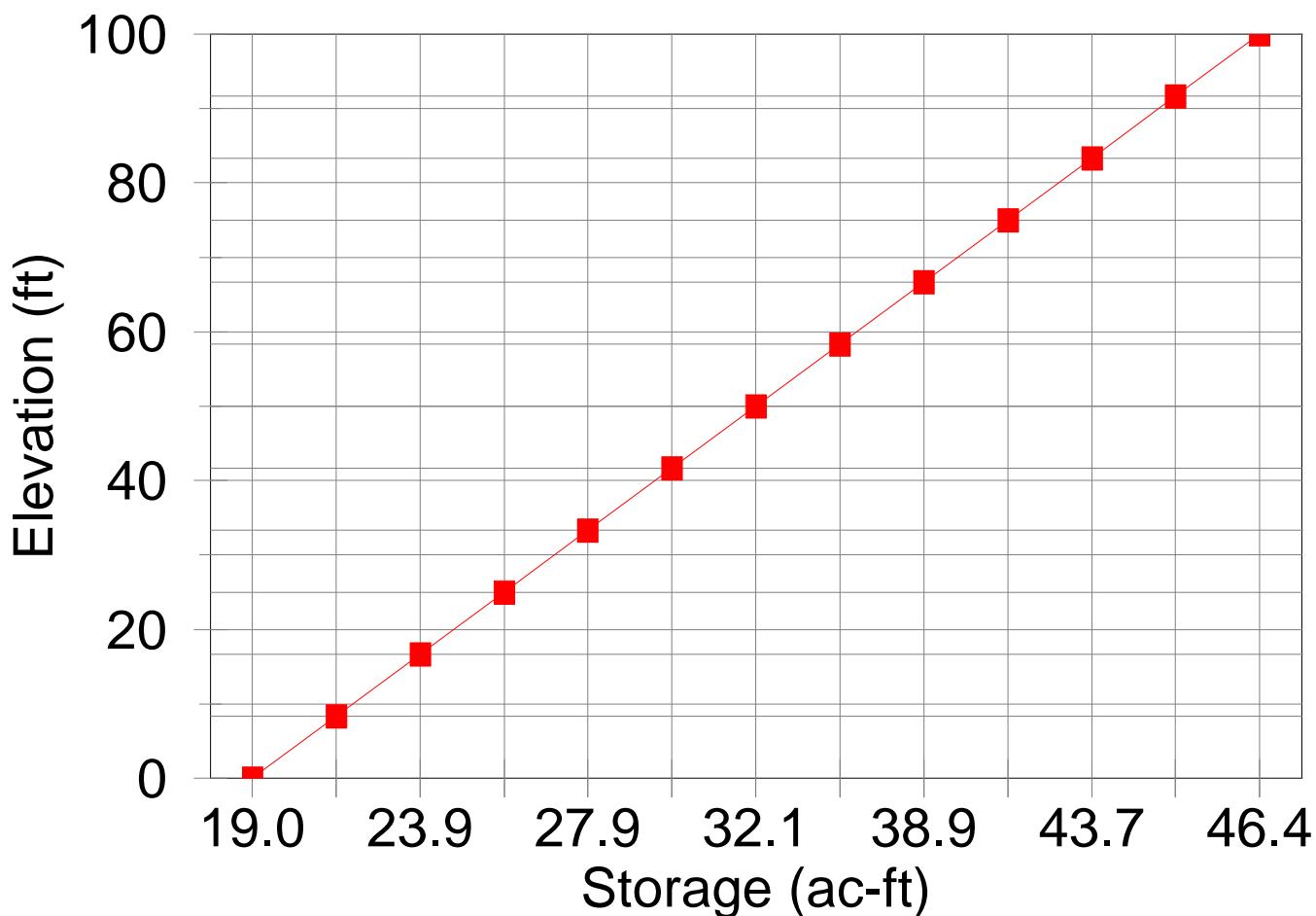
Map: 236

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			Stage (ft)	Backwater (HEC-RAS)	
		RID	77th	Total		Rating Curve	
						77th	TOTAL
1027	19.0	0	0	0	1027	0	0
1027.1	20.6	0	0.3	0.3	1027.1	0	0
1027.2	23.9	0	2.74	2.74	1027.2	0	0
1027.3	25.9	0	23.98	23.98	1027.3	0	0
1027.4	27.9	0.47	73.02	73.49	1027.4	0	0
1027.5	29.9	16.69	157.67	174.36	1027.5	0	0
1027.6	32.1	88.64	278.71	367.35	1027.6	50	138.64
1027.7	36.6	211.23	434.66	645.89	1027.7	100	475.16
1027.8	38.9	375.16	626.47	1001.63	1027.8	100	475.16
1027.9	41.3	575.58	855.05	1430.63	1027.9	200	1277.28
1028	43.7	809.83	1118.75	1928.58	1028	200	1277.28
1028.1	44.6	1077.28	1416.81	2494.09	1028.1	200	1277.28
1028.2	46.4	1382.13	1748.79	3130.92	1028.2	200	1277.28

Backwater rating curve from HEC-RAS governs due to weir inundation

# Stage-Storage Relationship

Basin:SH Map:236



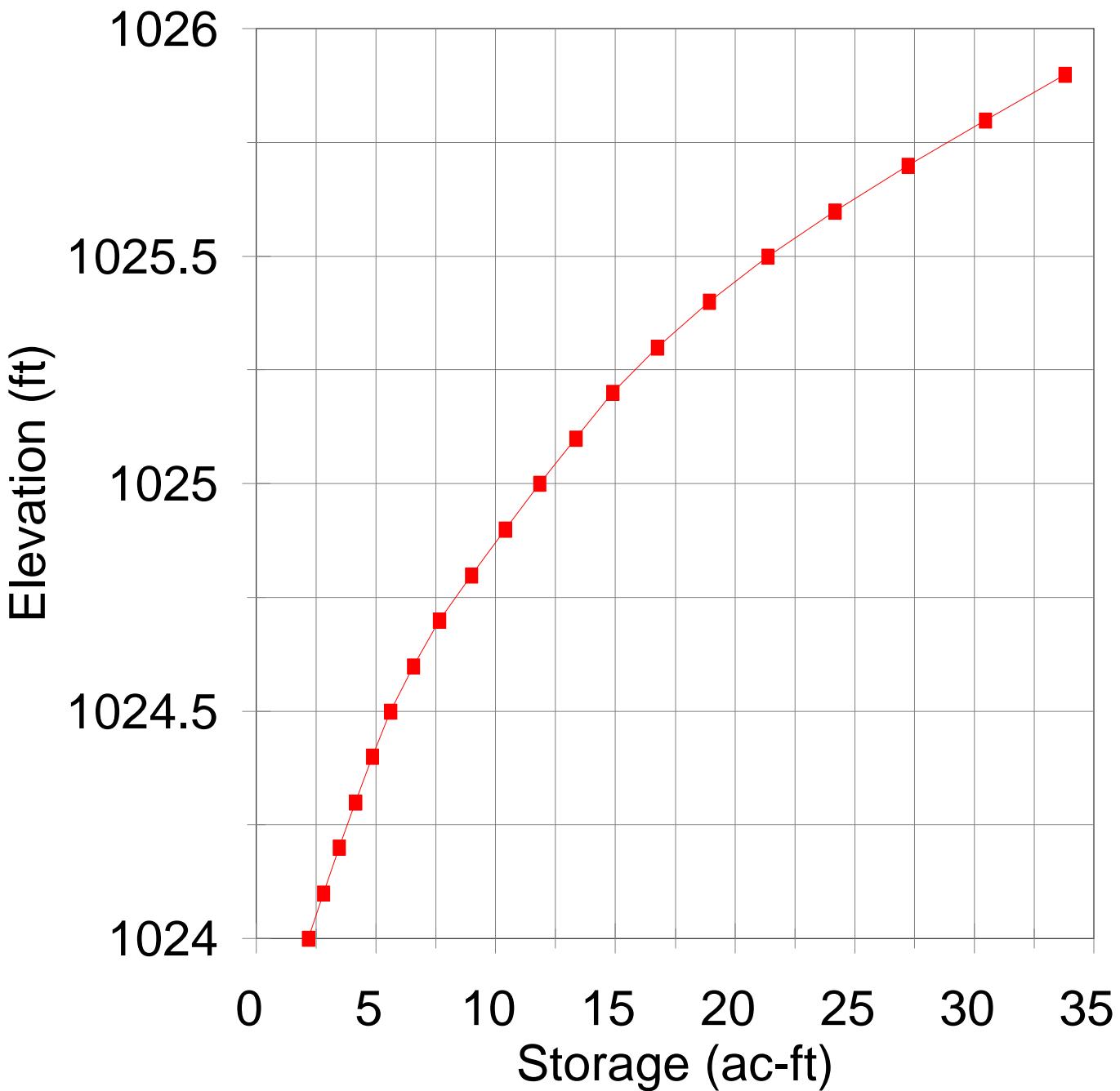
**SUB-BASIN STAGE-DISCHARGE RELATIONSHIP**

Basin: SB Map: 207

Stage (ft)	Storage (ac-ft)	RID	Discharge (cfs) BERM	Total
1024.0	2.18	0	0	0
1024.1	2.81	0	1.64	1.64
1024.2	3.46	0	9.33	9.33
1024.3	4.16	0	25.89	25.89
1024.4	4.87	0	53.54	53.54
1024.5	5.62	0	94.22	94.22
1024.6	6.57	0	149.72	149.72
1024.7	7.66	0	221.71	221.71
1024.8	9	0.44	311.81	312.25
1024.9	10.41	6.84	421.57	428.41
1025.0	11.86	28.57	552.51	581.08
1025.1	13.35	74.48	704.56	779.04
1025.2	14.91	148.98	879.98	1028.96
1025.3	16.76	253.79	1080.07	1333.86
1025.4	18.95	387.47	1306.1	1693.57
1025.5	21.38	554.99	1559.34	2114.33
1025.6	24.18	787.48	1841.01	2628.49
1025.7	27.25	1103.8	2152.35	3256.15
1025.8	30.48	1507.16	2494.57	4001.73
1025.9	33.79	1994.64	2868.89	4863.53

# Stage-Storage Relationship

Basin:SB Map:207



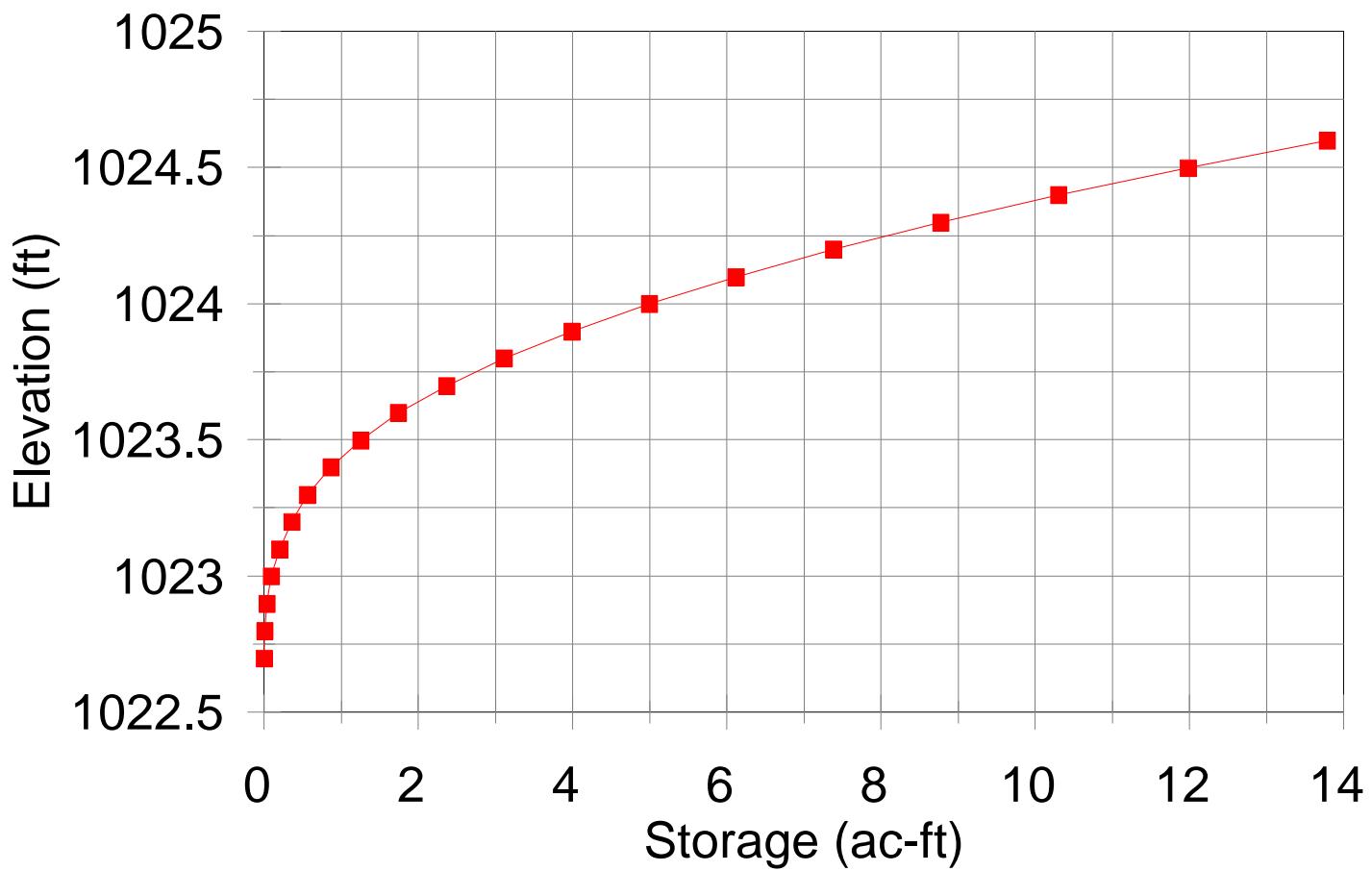
## SUB-BASIN STAGE-DISCHARGE RELATIONSHIP

Basin: SD Map: 235

Stage (ft)	Storage (ac-ft)	RID - South	85th - West	Discharge (cfs) Total
1021.4	0	0	0	0
1021.5	0	0	0.16	0.16
1021.6	0	0	1.5	1.5
1021.7	0	0	5.49	5.49
1021.8	0	0	13.23	13.23
1021.9	0	0	25.67	25.67
1022	0	0	45.69	45.69
1022.1	0	0	73.33	73.33
1022.2	0	0	106.1	106.1
1022.3	0	0	143.7	143.7
1022.4	0	0	185.92	185.92
1022.5	0	0	232.6	232.6
1022.6	0	0	283.6	283.6
1022.7	0	0	338.82	338.82
1022.8	0.01	0	398.4	398.4
1022.9	0.04	0	464.29	464.29
1023	0.1	0	534.09	534.09
1023.1	0.21	0	607.7	607.7
1023.2	0.36	0	684.99	684.99
1023.3	0.57	0	765.89	765.89
1023.4	0.87	0	850.3	850.3
1023.5	1.26	0	938.59	938.59
1023.6	1.75	0	1029.82	1029.82
1023.7	2.37	0	1124.35	1124.35
1023.8	3.12	0	1222.11	1222.11
1023.9	4	0	1323.06	1323.06
1024	5	0	1427.19	1427.19
1024.1	6.12	0	1534.34	1534.34
1024.2	7.39	0	1644.53	1644.53
1024.3	8.78	0	1757.7	1757.7
1024.4	10.31	0	1873.82	1873.82
1024.5	11.99	0	1992.84	1992.84
1024.6	13.79	0	2114.74	2114.74
1024.7	15.76	0.6	2239.48	2240.08
1024.8	17.97	12.27	2497.34	2509.61
1024.9	20.44	40.46	2630.43	2670.89
1025	22.85	87.67	2767.14	2854.81

# Stage-Storage Relationship

Basin:SD Map:235



# SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

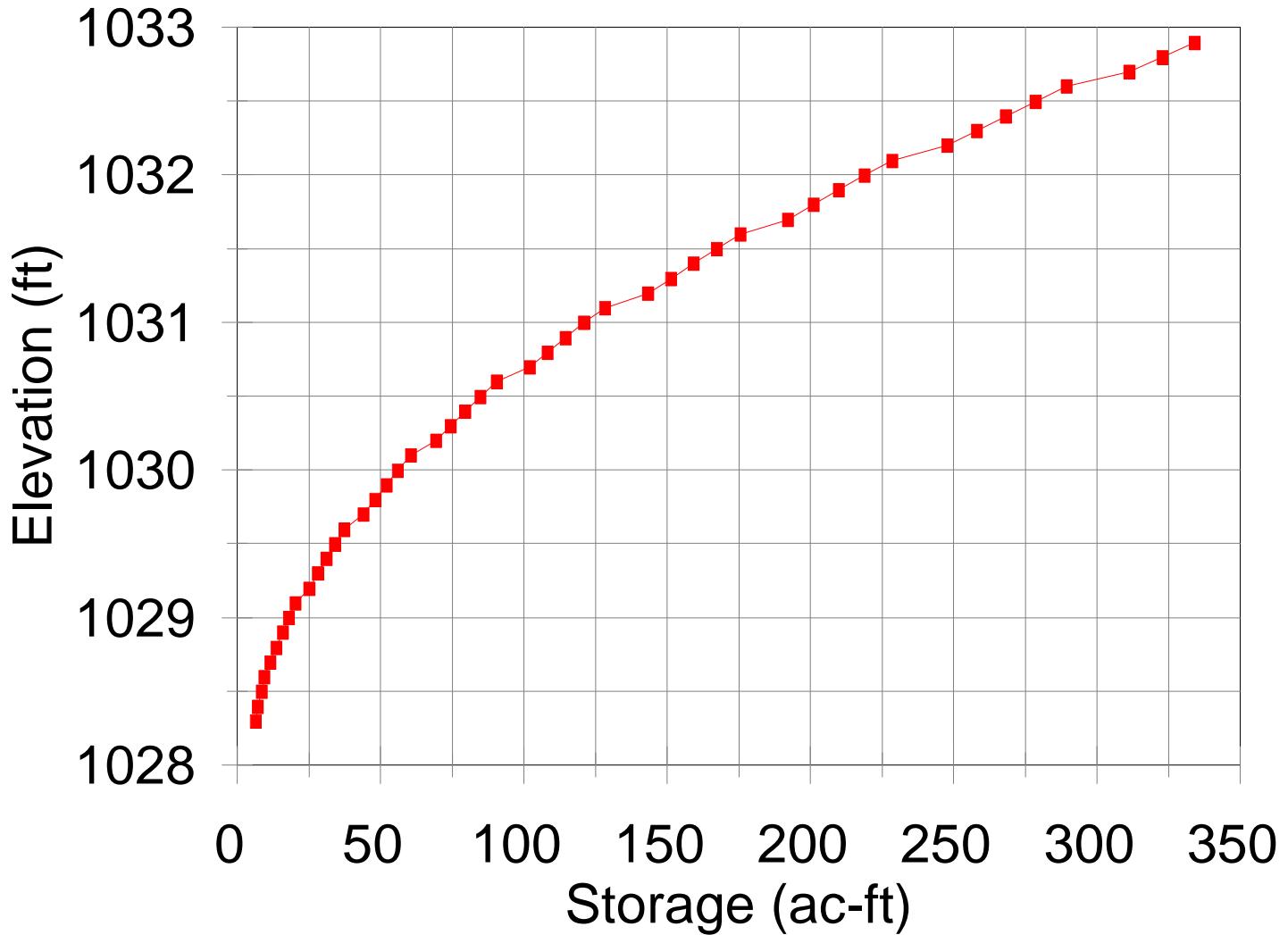
Basin: SF

Map: 237

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		SPRR	75th	Total	
1028.3	6.5	0	0.01	0.01	
1028.4	7.2	0	2.41	2.41	
1028.5	8.6	0	12.2	12.2	
1028.6	9.6	0	32.42	32.42	
1028.7	11.7	0	67.16	67.16	
1028.8	13.8	0	128.8	128.8	
1028.9	15.9	0	221.78	221.78	
1029.0	18.0	0	347.73	347.73	
1029.1	20.4	0	510.57	510.57	
1029.2	25.3	0	713.65	713.65	
1029.3	28.3	0	960.66	960.66	
1029.4	31.3	0	1253.82	1253.82	
1029.5	34.2	0	1590.73	1590.73	
1029.6	37.5	0	1970.3	1970.3	
1029.7	44.2	0	2392.9	2392.9	
1029.8	48.2	0	2860.9	2860.9	
1029.9	52.1	0	3378.96	3378.96	
1030.0	56.1	0	3945.56	3945.56	
1030.1	60.6	0	4555.97	4555.97	
1030.2	69.5	0	5208.47	5208.47	
1030.3	74.6	0	5901.21	5901.21	
1030.4	79.7	0	6633.11	6633.11	
1030.5	84.8	0	7403.67	7403.67	
1030.6	90.6	0	8212.72	8212.72	
1030.7	102.1	0	9060.22	9060.22	
1030.8	108.4	0	9945.59	9945.59	
1030.9	114.7	0	10867.71	10867.71	
1031.0	121.0	0	11826.89	11826.89	
1031.1	128.5	0	12822.93	12822.93	
1031.2	143.5	0	13855.37	13855.37	
1031.3	151.4	0	14923.94	14923.94	
1031.4	159.4	0	16028.43	16028.43	
1031.5	167.4	0	17168.7	17168.7	
1031.6	175.7	0	18344.63	18344.63	
1031.7	192.3	0	19556.17	19556.17	
1031.8	201.2	0	20803.25	20803.25	
1031.9	210.1	0	22085.15	22085.15	
1032.0	219.0	0	23402.03	23402.03	
1032.1	228.6	0	24754.15	24754.15	
1032.2	247.8	0	26141.5	26141.5	
1032.3	258.1	0	27564.1	27564.1	
1032.4	268.4	0	29021.96	29021.96	
1032.5	278.6	0	30514.96	30514.96	
1032.6	289.6	0	32042.98	32042.98	
1032.7	311.5	0	33606.16	33606.16	
1032.8	322.9	0	35204.44	35204.44	
1032.9	334.3	0	36837.7	36837.7	

# Stage-Storage Relationship

Basin:SF Map:237



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

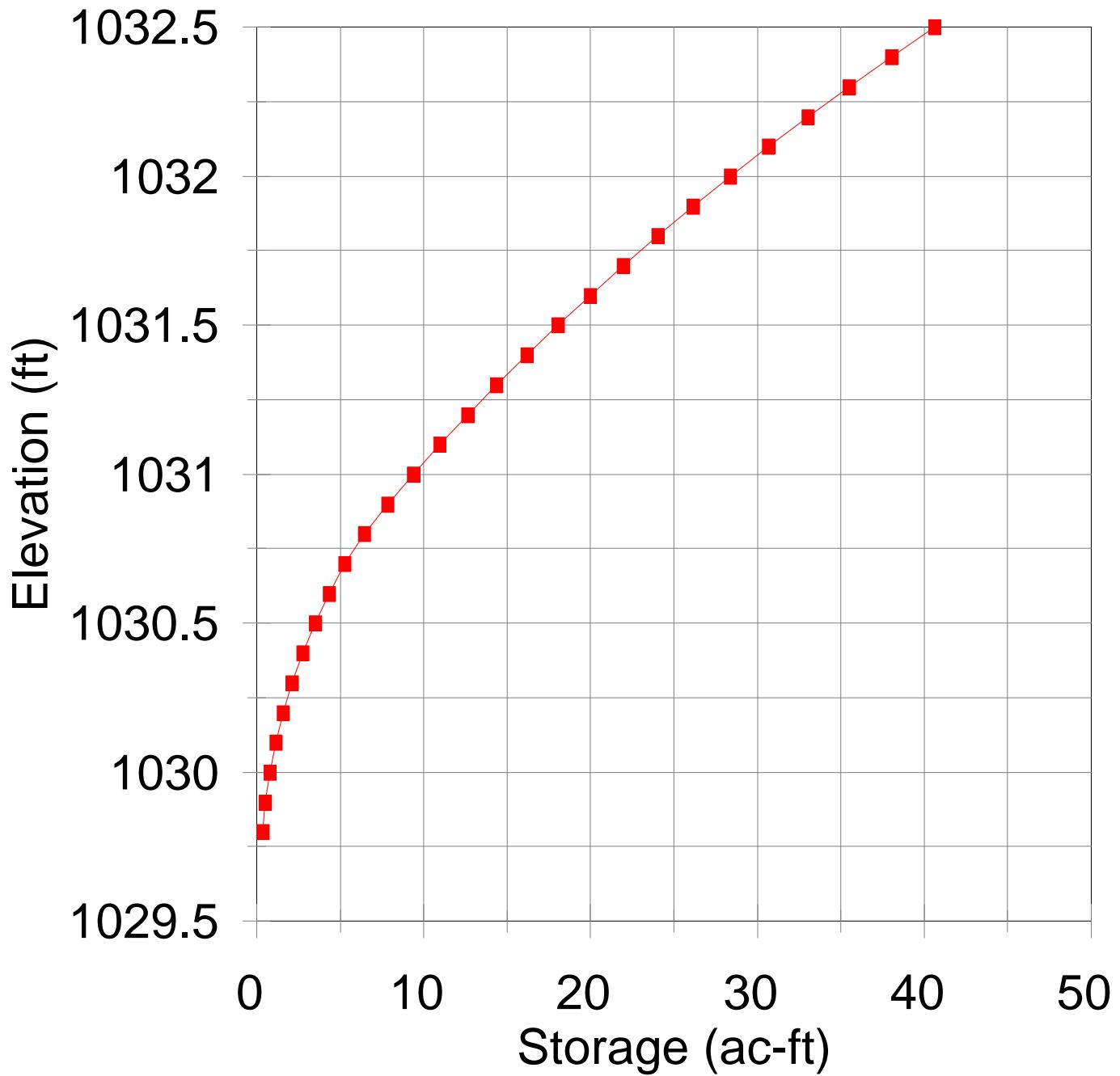
Basin: UE

Map: 251

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	69th	Total	
1029.8	0.4	0	0.02	0.02	
1029.9	0.5	0	6.5	6.5	
1030	0.8	0	29.96	29.96	
1030.1	1.2	0	70.29	70.29	
1030.2	1.6	0	126.71	126.71	
1030.3	2.1	0	197.98	197.98	
1030.4	2.8	0	283.51	283.51	
1030.5	3.5	13.67	383.1	396.77	
1030.6	4.4	35.39	496.96	532.35	
1030.7	5.3	71.31	625.36	696.67	
1030.8	6.5	126.1	772.21	898.31	
1030.9	7.9	207.29	945.28	1152.57	
1031	9.4	314.76	1144.26	1459.02	
1031.1	11.0	448.54	1368.59	1817.13	
1031.2	12.7	604.98	1619.34	2224.32	
1031.3	14.4	783.31	1897.14	2680.45	
1031.4	16.2	983.11	2201.66	3184.77	
1031.5	18.1	1203.49	2536.42	3739.91	
1031.6	20.0	1446.13	2901.66	4347.79	
1031.7	22.0	1710.98	3296.75	5007.73	
1031.8	24.0	2002.35	3720.41	5722.76	
1031.9	26.2	2332.72	4170.86	6503.58	
1032	28.4	2697.65	4649.19	7346.84	
1032.1	30.7	3096.08	5158.87	8254.95	
1032.2	33.0	3525.08	5699.23	9224.31	
1032.3	35.5	3987.52	6266.86	10254.38	
1032.4	38.0	4492.79	6858.76	11351.55	
1032.5	40.7	5039.82	7473.12	12512.94	

# Stage-Storage Relationship

Basin:UE Map:251



# SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

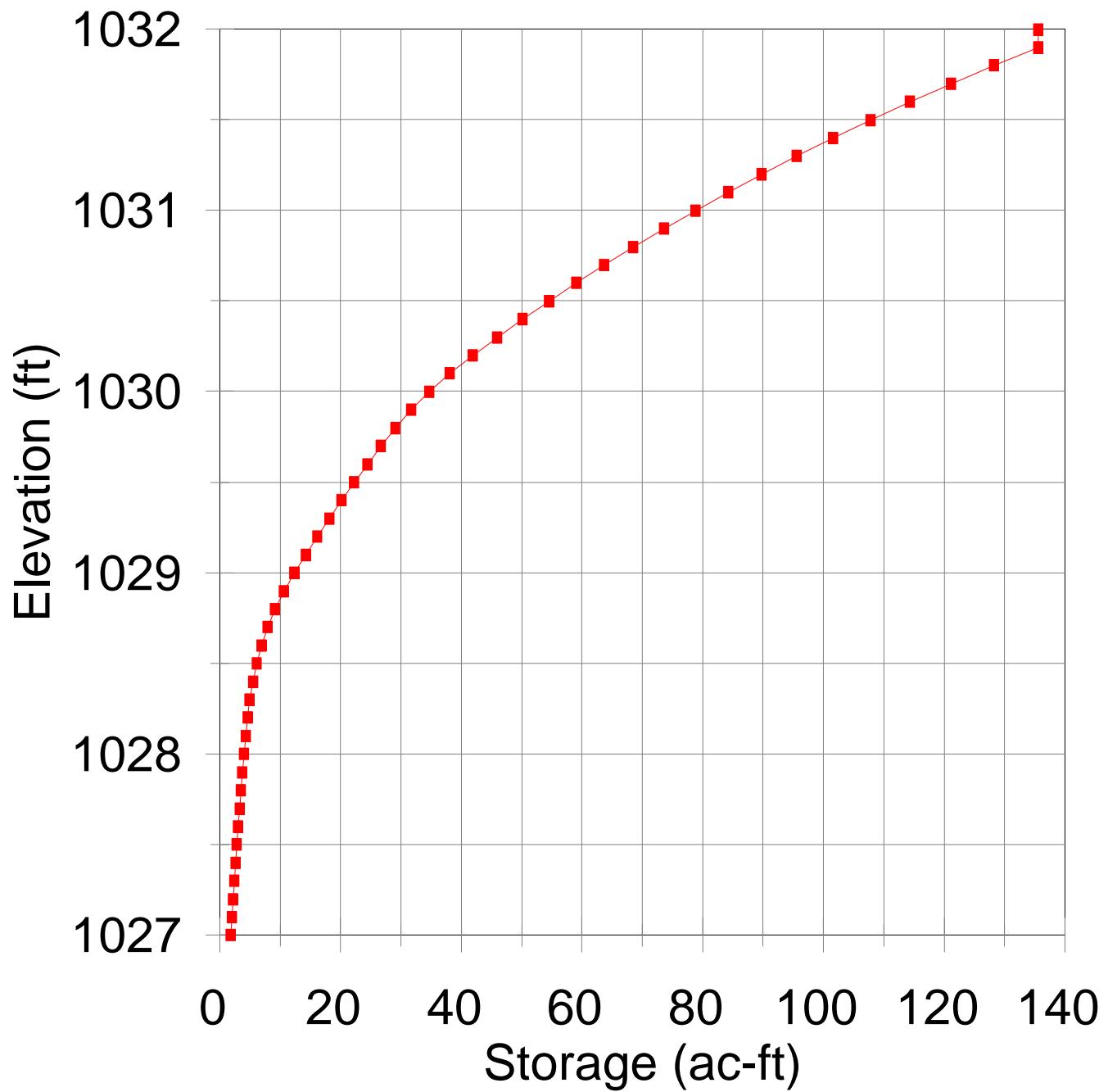
Basin: PC

Map: 252

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	67th	Total	
1027.0	1.83	0	0	0	
1027.1	2.03	0	0	0	
1027.2	2.24	0	0	0	
1027.3	2.45	0	0	0	
1027.4	2.66	0	0	0	
1027.5	2.87	0	0	0	
1027.6	3.09	0	0	0	
1027.7	3.32	0	0	0	
1027.8	3.56	0	0	0	
1027.9	3.81	0	0	0	
1028.0	4.07	0	0	0	
1028.1	4.34	0	0	0	
1028.2	4.62	0	0	0	
1028.3	4.95	0	0	0	
1028.4	5.52	0	0	0	
1028.5	6.20	0	0	0	
1028.6	7.01	0	0	0	
1028.7	7.95	0	0	0	
1028.8	9.18	0	0	0	
1028.9	10.68	0	0	0	
1029.0	12.43	0	0	0	
1029.1	14.30	0	0	0	
1029.2	16.23	0	0	0	
1029.3	18.21	0	0	0	
1029.4	20.24	0	0	0	
1029.5	22.31	0	0	0	
1029.6	24.47	0	0	0	
1029.7	26.70	0	0	0	
1029.8	29.13	0	5.04	5.04	
1029.9	31.75	8.19	18.45	26.64	
1030.0	34.79	30.93	38.82	69.75	
1030.1	38.17	68.31	66.09	134.4	
1030.2	41.98	124.02	100.56	224.58	
1030.3	46.00	212.47	144.57	357.04	
1030.4	50.22	342.54	202.45	544.99	
1030.5	54.60	531.82	279.73	811.55	
1030.6	59.11	791.96	384.81	1176.77	
1030.7	63.77	1116.44	519.14	1635.58	
1030.8	68.59	1507.9	684.9	2192.8	
1030.9	73.62	1979	889.69	2868.69	
1031.0	78.83	2517.79	1136.07	3653.86	
1031.1	84.25	3119.36	1423.17	4542.53	
1031.2	89.85	3801.63	1751.13	5552.76	
1031.3	95.66	4568.35	2115.29	6683.64	
1031.4	101.67	5410.23	2516.32	7926.55	
1031.5	107.90	6326.26	2956.9	9283.16	
1031.6	114.41	7316.33	3438.62	10754.95	
1031.7	121.21	8378.5	3969.58	12348.08	
1031.8	128.27	9510.25	4553.39	14063.64	
1031.9	135.62	10706.58	5198.49	15905.07	
1032.0	135.62	11964.09	5912.23	17876.32	

# Stage-Storage Relationship

Basin:PC Map:252



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

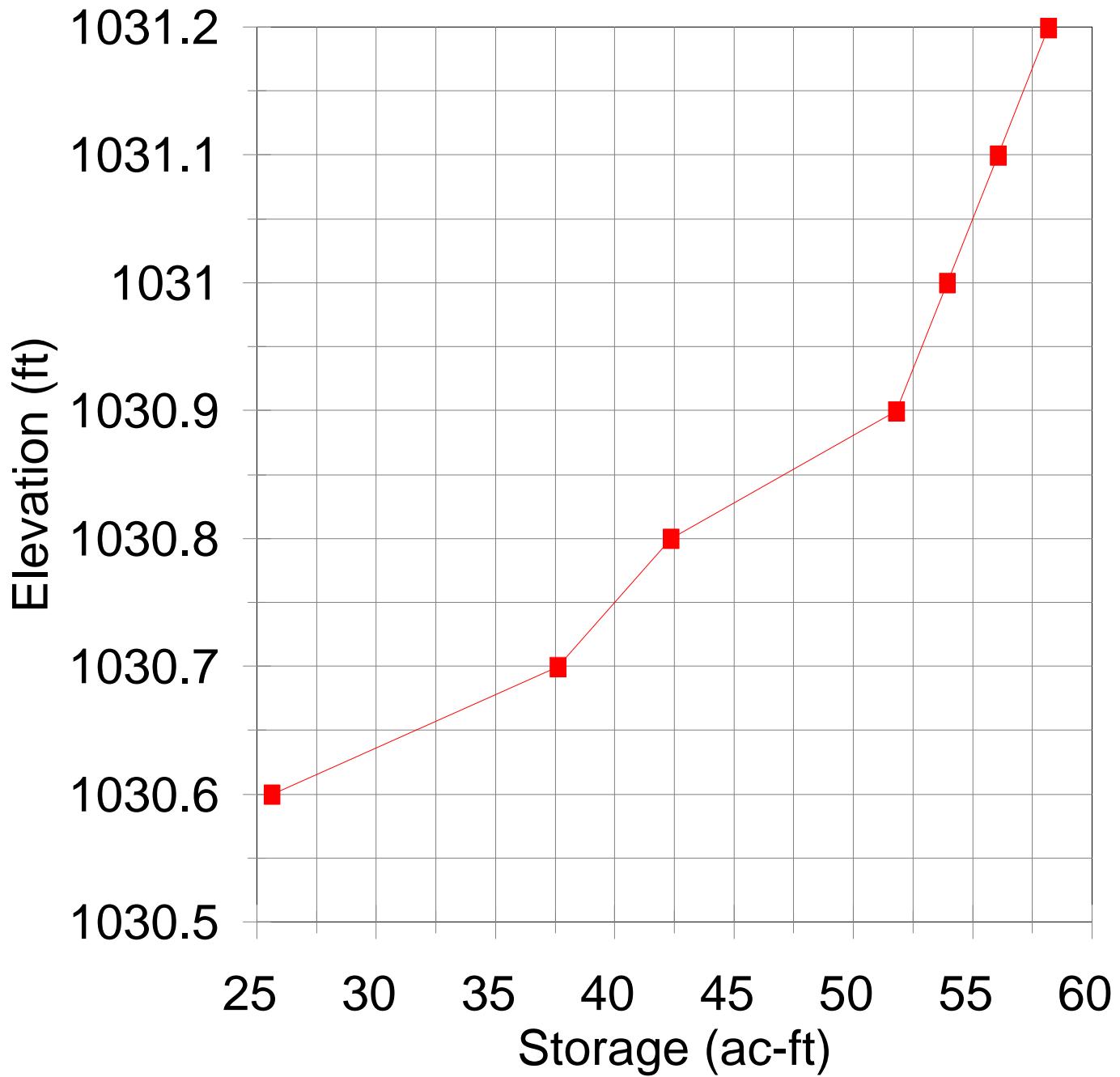
Basin: PD

Map: 266

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	63rd	Total	
1030.6	25.6	0	0	0	
1030.7	37.6	3.49	0	3.49	
1030.8	42.4	28.16	0	28.16	
1030.9	51.8	100.62	0	100.62	
1031	53.9	246.29	0	246.29	
1031.1	56.1	486.71	0	486.71	
1031.2	58.2	819.58	0	819.58	
1031.3	58.2	1248.51	0.84	1249.35	
1031.4	58.2	1769.99	4.66	1774.65	
1031.5	58.2	2385.07	13.9	2398.97	
1031.6	58.2	3098.89	43	3141.89	
1031.7	58.2	3938.57	107.41	4045.98	
1031.8	58.2	4918.3	225.59	5143.89	
1031.9	58.2	6029.35	399.65	6429	
1032	58.2	7258.99	638.84	7897.83	
1032.1	58.2	8597.52	933.42	9530.94	
1032.2	58.2	10042.33	1275.99	11318.32	
1032.3	58.2	11586.65	1662.49	13249.14	
1032.4	58.2	13228.81	2090.81	15319.62	
1032.5	58.2	14965.68	2559.46	17525.14	
1032.6	58.2	16791.23	3066.18	19857.41	
1032.7	58.2	18705.27	3609.74	22315.01	
1032.8	58.2	20704.7	4188	24892.7	
1032.9	58.2	22788.85	4800.27	27589.12	

# Stage-Storage Relationship

Basin:PD Map:266



**SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP**

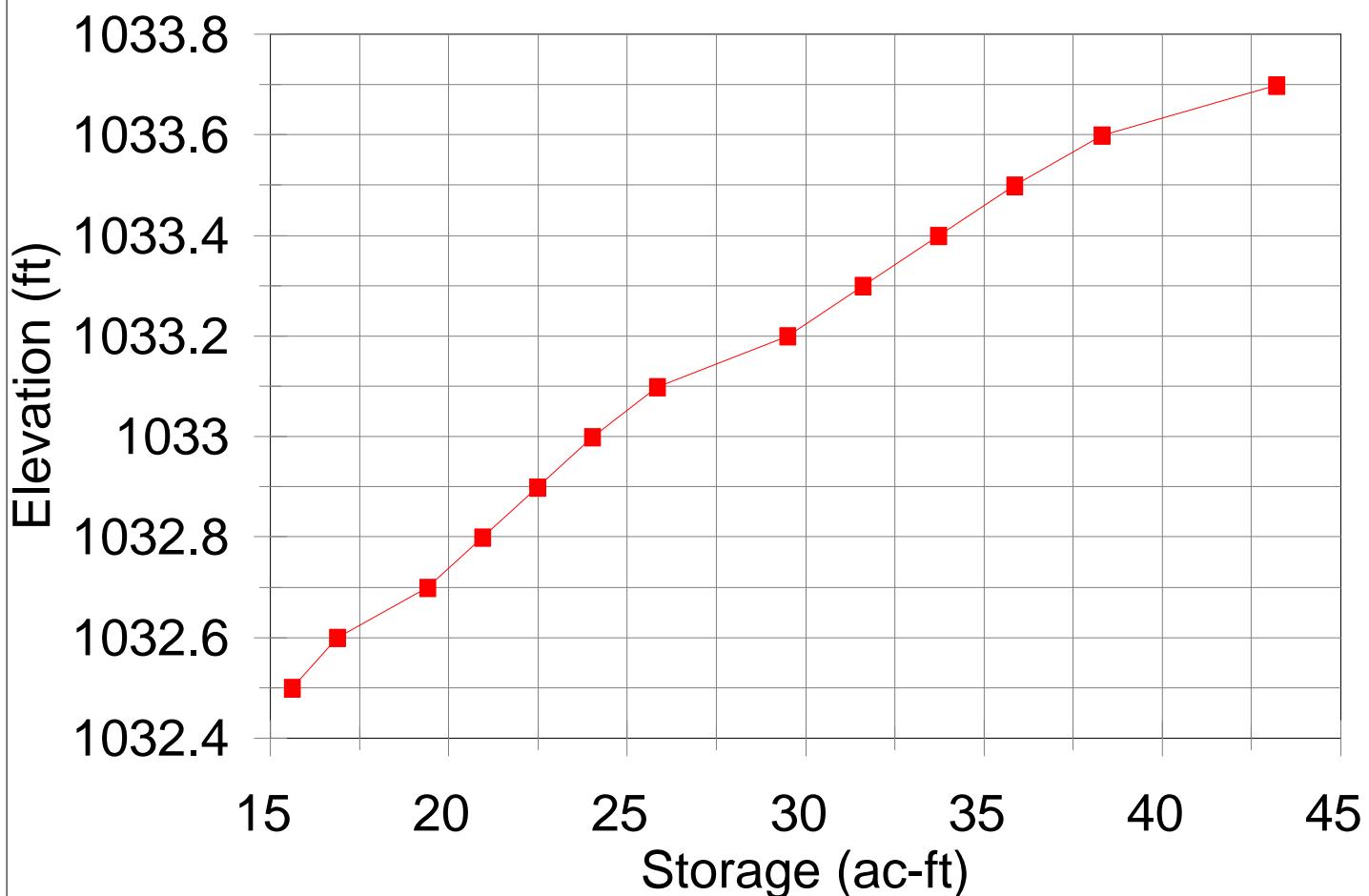
Basin: PE

Map: 267

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	59th	Total	
1032.5	15.6	0	0	0	
1032.6	16.9	1.44	0	1.44	
1032.7	19.4	8.18	0	8.18	
1032.8	21.0	22.77	0	22.77	
1032.9	22.5	76.55	0	76.55	
1033	24.0	193.66	0	193.66	
1033.1	25.9	376.29	0	376.29	
1033.2	29.5	636.82	0	636.82	
1033.3	31.6	987.14	0	987.14	
1033.4	33.7	1419.81	0	1419.81	
1033.5	35.9	1930.94	0	1930.94	
1033.6	38.3	2515.16	1.24	2516.4	
1033.7	43.2	3168.96	8.09	3177.05	

# Stage-Storage Relationship

Basin:PE Map:267



**SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP**

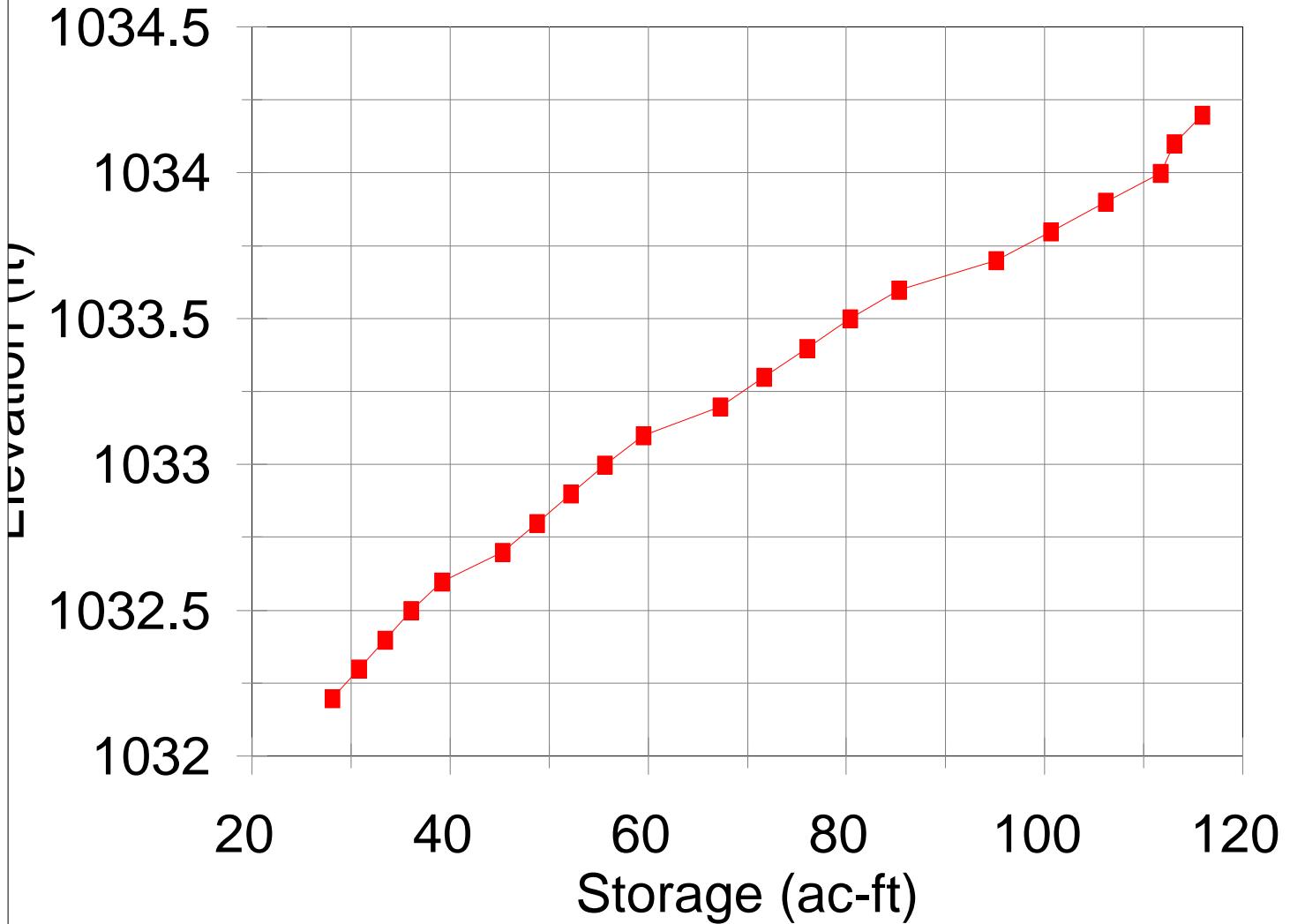
Basin: PF

Map: 267

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	55th	Total	
1032.2	28.2	0.01	0	0.01	
1032.3	30.8	3.81	0	3.81	
1032.4	33.4	19.36	0	19.36	
1032.5	36.1	53.3	0	53.3	
1032.6	39.2	124.9	0	124.9	
1032.7	45.3	255.34	0	255.34	
1032.8	48.8	457.54	0	457.54	
1032.9	52.2	724.59	0	724.59	
1033.0	55.7	1050.86	0	1050.86	
1033.1	59.6	1433.66	0	1433.66	
1033.2	67.3	1875.24	0	1875.24	
1033.3	71.7	2381.83	0.59	2382.42	
1033.4	76.0	2954.84	9.96	2964.8	
1033.5	80.4	3610.33	38.06	3648.39	
1033.6	85.3	4355.62	81.49	4437.11	
1033.7	95.1	5179.52	160.28	5339.8	
1033.8	100.7	6077.67	285.05	6362.72	
1033.9	106.2	7045.84	445.75	7491.59	
1034.0	111.8	8085.06	640.85	8725.91	
1034.1	113.1	9193.41	871.31	10064.72	
1034.2	115.9	10370.09	1142.87	11512.96	
1034.3	115.9	11614.78	1458.83	13073.61	
1034.4	115.9	12922.4	1814.95	14737.35	
1034.5	115.9	14292.37	2210.25	16502.62	
1034.6	115.9	15720.5	2643.29	18363.79	
1034.7	115.9	17203.45	3108.83	20312.28	
1034.8	115.9	18739.48	3607.62	22347.1	

# Stage-Storage Relationship

Basin:PF Map:267



**SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP**

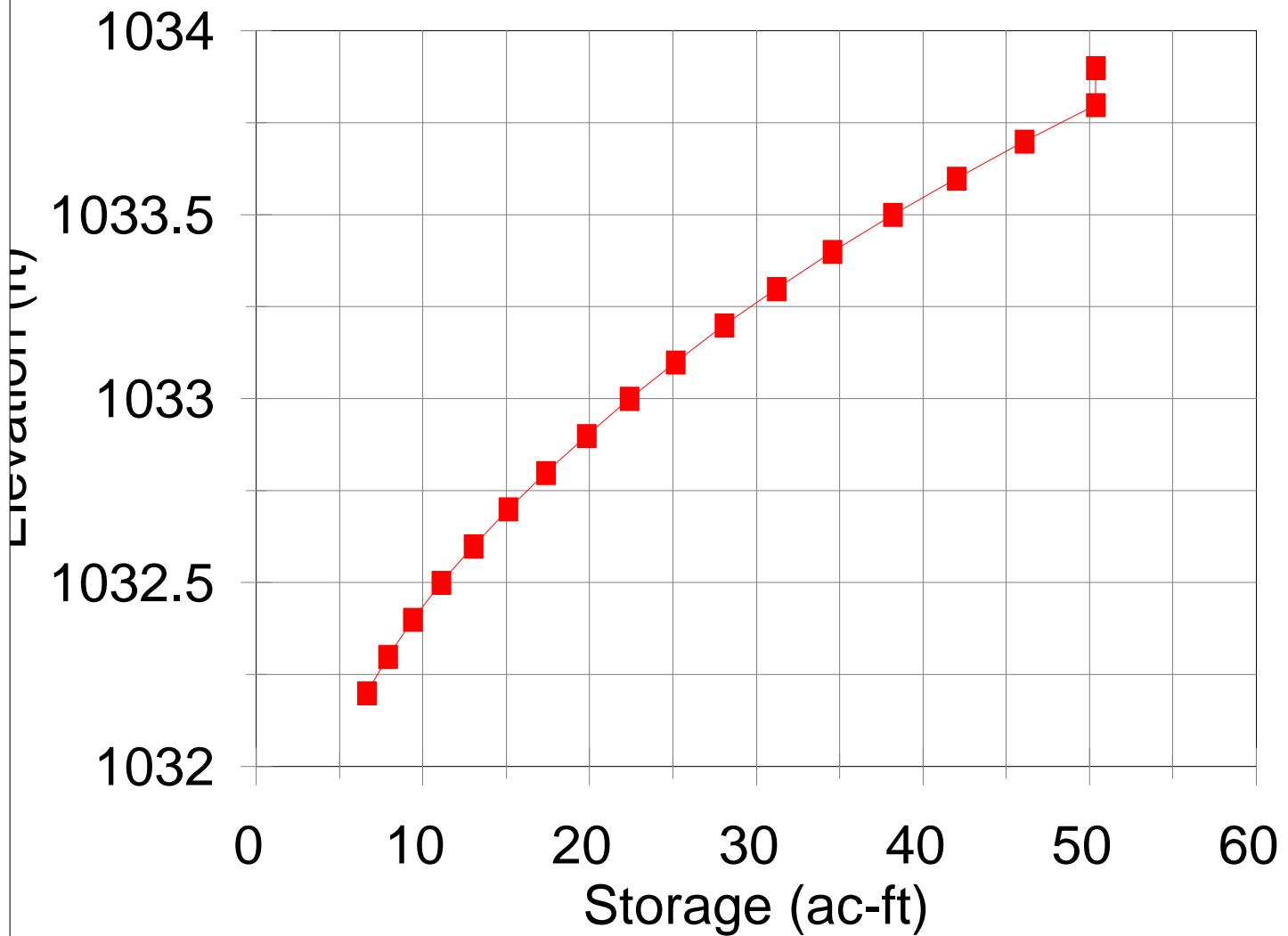
Basin: QA

Map: 268

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	51st	Total	
1032.2	6.64	0.03	0	0.03	
1032.3	7.92	0.65	0	0.65	
1032.4	9.41	2.6	0.33	2.93	
1032.5	11.12	9.17	11.26	20.43	
1032.6	13.04	29.86	39.43	69.29	
1032.7	15.14	107.99	87.11	195.1	
1032.8	17.40	255.14	155.52	410.66	
1032.9	19.83	488.19	242	730.19	
1033.0	22.42	828.8	344.32	1173.12	
1033.1	25.18	1267.87	461.56	1729.43	
1033.2	28.11	1794.63	593.62	2388.25	
1033.3	31.23	2408.9	740.22	3149.12	
1033.4	34.59	3109.35	901.94	4011.29	
1033.5	38.20	3892.84	1079.27	4972.11	
1033.6	42.05	4760.67	1272.08	6032.75	
1033.7	46.12	5709.77	1481.07	7190.84	
1033.8	50.37	6737.58	1706.98	8444.56	
1033.9	50.37	7836.2	1950.11	9786.31	

# Stage-Storage Relationship

Basin:QA Map:268



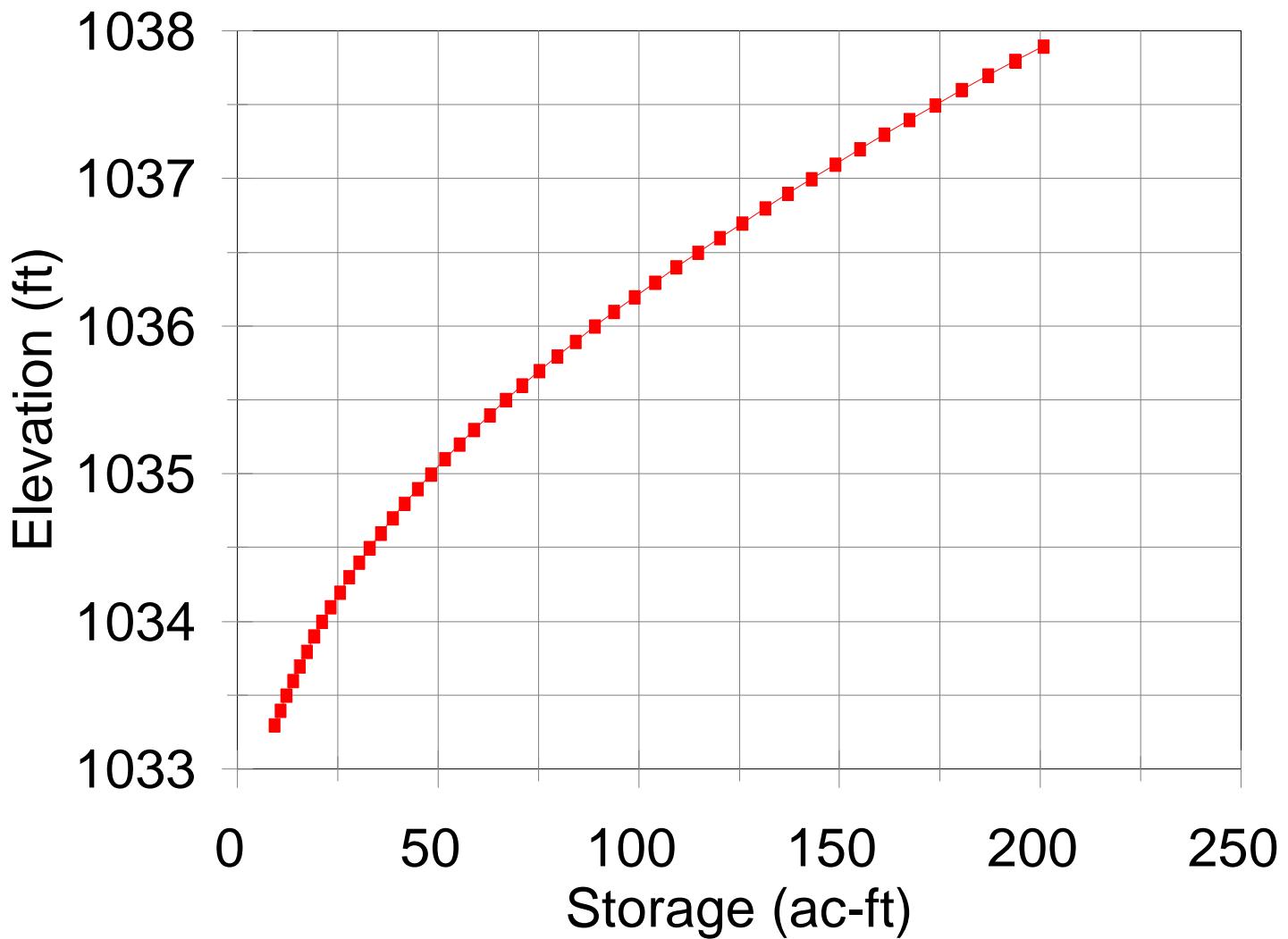
## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

Basin: QB Map: 268

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	47th Ave	Total	
1033.3	9.4	0	0	0	
1033.4	10.8	0.83	0	0.83	
1033.5	12.3	6.34	0	6.34	
1033.6	13.9	19.26	0	19.26	
1033.7	15.5	41.62	0	41.62	
1033.8	17.3	75.18	0	75.18	
1033.9	19.2	123.01	0	123.01	
1034.0	21.2	193.35	0	193.35	
1034.1	23.3	295.26	0	295.26	
1034.2	25.5	423.46	0	423.46	
1034.3	27.9	576.93	0	576.93	
1034.4	30.4	755.52	0	755.52	
1034.5	33.1	958.22	0	958.22	
1034.6	35.8	1184.31	0.23	1184.54	
1034.7	38.8	1432.92	3.62	1436.54	
1034.8	41.8	1705.74	13.08	1718.82	
1034.9	45.0	2003.13	30.58	2033.71	
1035.0	48.3	2325.69	57.76	2383.45	
1035.1	51.7	2680.37	95.55	2775.92	
1035.2	55.3	3096.2	143.8	3240	
1035.3	59.1	3582.39	204.13	3786.52	
1035.4	62.9	4149.35	277.32	4426.67	
1035.5	66.9	4787.68	365.67	5153.35	
1035.6	71.1	5486.56	474.26	5960.82	
1035.7	75.3	6240.71	604.71	6845.42	
1035.8	79.8	7050.14	757.49	7807.63	
1035.9	84.3	7913.18	931.31	8844.49	
1036.0	89.1	8828.01	1126.26	9954.27	
1036.1	94.0	9793.72	1342.46	11136.18	
1036.2	99.0	10810.33	1580.41	12390.74	
1036.3	104.1	11887.96	1840.68	13728.64	
1036.4	109.4	13020.72	2132	15152.72	
1036.5	114.8	14204.46	2464.56	16669.02	
1036.6	120.3	15435.05	2834.52	18269.57	
1036.7	125.9	16708.09	3238.18	19946.27	
1036.8	131.5	18027.31	3673.12	21700.43	
1036.9	137.3	19392.12	4135.98	23528.1	
1037.0	143.1	20800.2	4627.21	25427.41	
1037.1	149.0	22249.78	5146	27395.78	
1037.2	155.1	23738.78	5693.23	29432.01	
1037.3	161.2	25269.95	6267.73	31537.68	
1037.4	167.5	26843.28	6865.75	33709.03	
1037.5	173.9	28458.77	7488.54	35947.31	
1037.6	180.4	30112.96	8136.31	38249.27	
1037.7	187.1	31801.66	8810.43	40612.09	
1037.8	193.9	33529.46	9509.79	43039.25	
1037.9	200.8	35296.47	10230.05	45526.52	
1038.0	200.8	37105.53	10973.27	48078.8	

# Stage-Storage Relationship

Basin:QB Map:268



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

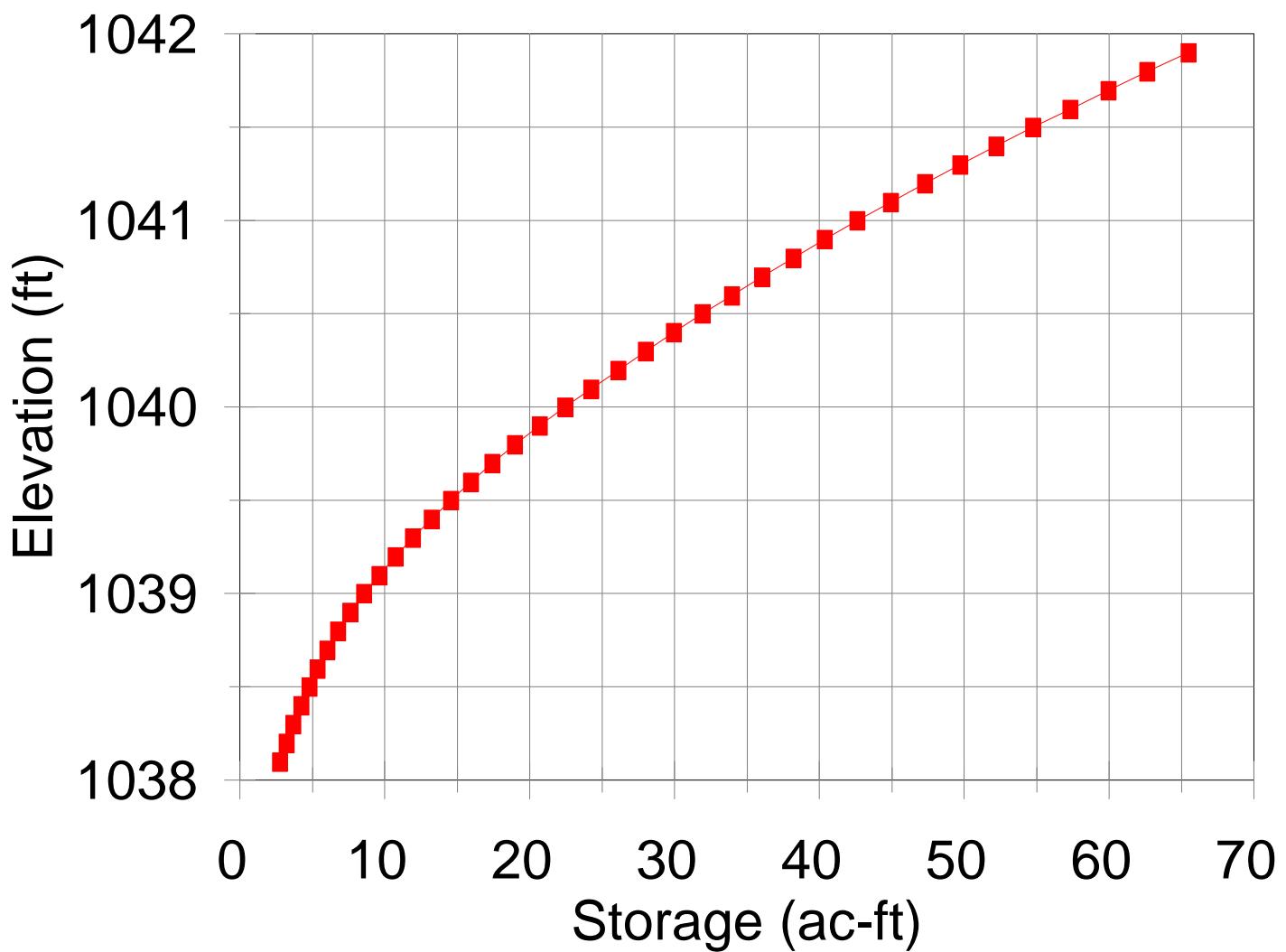
Basin: QD

Map: 269

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		RID	43rd	Total	
1038.1	2.8	0	0	0	
1038.2	3.3	0.36	0	0.36	
1038.3	3.7	2.96	0	2.96	
1038.4	4.3	11.91	0	11.91	
1038.5	4.8	30.05	0.4	30.45	
1038.6	5.4	58.17	3.9	62.07	
1038.7	6.1	99.73	11.12	110.85	
1038.8	6.8	157.3	21.82	179.12	
1038.9	7.6	230.12	40.05	270.17	
1039	8.6	317.68	70.7	388.38	
1039.1	9.6	420.41	118.7	539.11	
1039.2	10.8	538.62	187.87	726.49	
1039.3	11.9	672.91	287.29	960.2	
1039.4	13.2	823.14	422.77	1245.91	
1039.5	14.6	990	590.92	1580.92	
1039.6	16.0	1173.71	790.03	1963.74	
1039.7	17.5	1382.52	1021.28	2403.8	
1039.8	19.0	1619.11	1285.35	2904.46	
1039.9	20.7	1881.65	1578.67	3460.32	
1040	22.5	2170.93	1899.04	4069.97	
1040.1	24.3	2488.45	2244.39	4732.84	
1040.2	26.1	2836.92	2614.04	5450.96	
1040.3	28.0	3215.24	3007.75	6222.99	
1040.4	30.0	3621.26	3429.67	7050.93	
1040.5	31.9	4054.09	3882.52	7936.61	
1040.6	34.0	4513.6	4367.91	8881.51	
1040.7	36.1	4997.25	4887.33	9884.58	
1040.8	38.2	5504.01	5437.29	10941.3	
1040.9	40.4	6034.68	6016.86	12051.54	
1041	42.6	6589.78	6624.45	13214.23	
1041.1	45.0	7170.35	7259.73	14430.08	
1041.2	47.3	7773.79	7922.44	15696.23	
1041.3	49.7	8400.48	8611.18	17011.66	
1041.4	52.2	9052.36	9326.39	18378.75	
1041.5	54.8	9742.82	10067.58	19810.4	
1041.6	57.3	10471.64	10834.75	21306.39	
1041.7	60.0	11229.13	11627.88	22857.01	
1041.8	62.7	12013.01	12446.88	24459.89	
1041.9	65.5	12825.53	13291.68	26117.21	

# Stage-Storage Relationship

Basin:QD Map:269



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

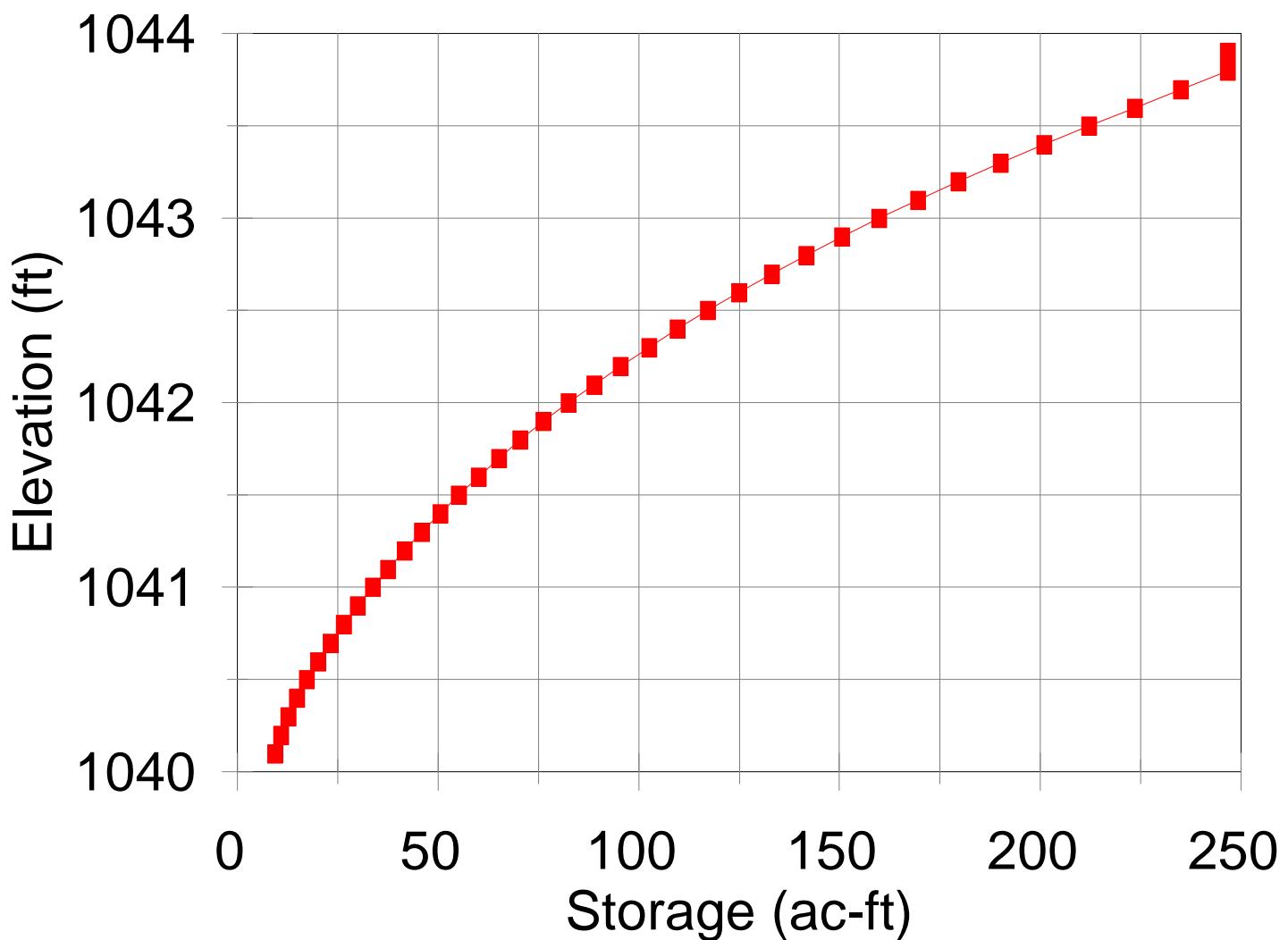
Basin: QE

Map: 269

	Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
			SPRR	RID	Total	
	1040.1	9.51	0.00	0.00	0.00	
	1040.2	10.96	1.82	0.00	1.82	
	1040.3	12.70	17.56	0.00	17.56	
	1040.4	14.88	62.77	0.00	62.77	
	1040.5	17.38	138.16	0.00	138.16	
	1040.6	20.17	242.31	0.00	242.31	
	1040.7	23.23	389.42	0.00	389.42	
	1040.8	26.51	581.87	0.00	581.87	
	1040.9	30.02	833.96	0.00	833.96	
	1041.0	33.76	1158.03	0.00	1158.03	
	1041.1	37.68	1554.00	0.00	1554.00	
	1041.2	41.79	2032.47	0.00	2032.47	
	1041.3	46.08	2629.15	0.00	2629.15	
	1041.4	50.57	3344.27	0.00	3344.27	
	1041.5	55.23	4169.42	0.00	4169.42	
	1041.6	60.09	5108.43	0.00	5108.43	
	1041.7	65.19	6166.45	0.00	6166.45	
	1041.8	70.59	7334.94	0.00	7334.94	
	1041.9	76.36	8605.64	0.00	8605.64	
	1042.0	82.46	9974.72	1.53	9976.25	
	1042.1	88.90	11441.20	32.79	11473.99	
	1042.2	95.60	13010.87	97.04	13107.91	
	1042.3	102.55	14685.98	192.31	14878.29	
	1042.4	109.75	16467.25	320.30	16787.55	
	1042.5	117.22	18359.95	485.91	18845.86	
	1042.6	125.02	20362.04	689.52	21051.56	
	1042.7	133.22	22466.01	929.75	23395.76	
	1042.8	141.75	24661.99	1207.07	25869.06	
	1042.9	150.61	26945.94	1519.46	28465.40	
	1043.0	159.87	29317.08	1863.08	31180.16	
	1043.1	169.57	31770.45	2233.36	34003.81	
	1043.2	179.65	34301.75	2630.81	36932.56	
	1043.3	190.14	36906.14	3053.64	39959.78	
	1043.4	201.00	39579.98	3501.69	43081.67	
	1043.5	212.15	42323.22	3973.59	46296.81	
	1043.6	223.52	45132.57	4465.17	49597.74	
	1043.7	235.10	48004.68	4978.60	52983.28	
	1043.8	246.87	50937.60	5512.20	56449.80	
	1043.9	246.87	53929.29	6066.62	59995.91	

# Stage-Storage Relationship

Basin:QE Map:269



**SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP**

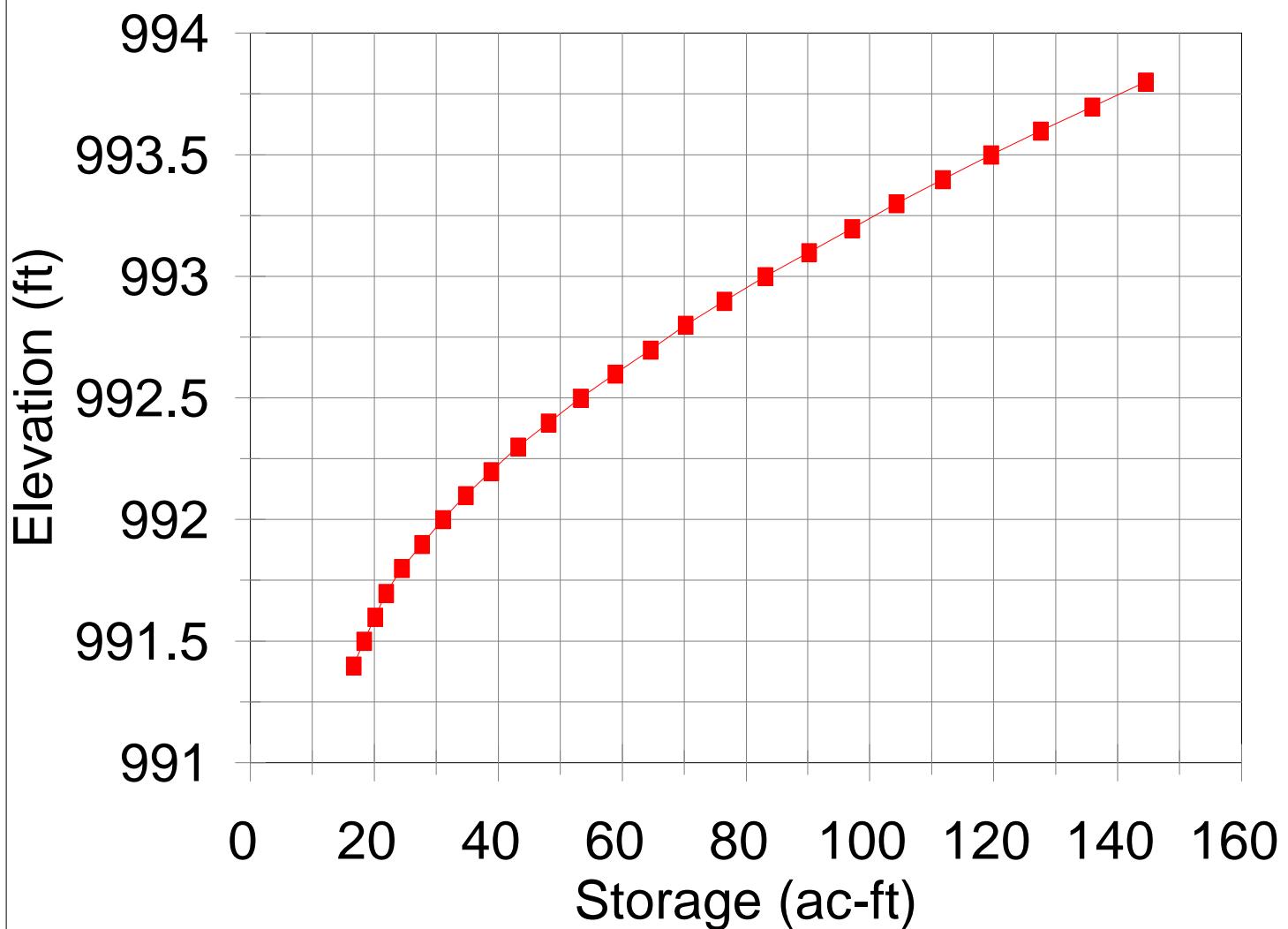
Basin: LE

Map: 246

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		SPRR	Ditch	Total	
991.4	16.71		0.0	0	
991.5	18.41		4.7	4.71	
991.6	20.15		33.7	33.65	
991.7	21.96		91.1	91.13	
991.8	24.53	0.0	178.5	178.49	
991.9	27.74	62.6	305.0	367.55	
992.0	31.14	214.9	473.5	688.33	
992.1	34.86	444.3	690.8	1135.08	
992.2	38.91	745.9	959.8	1705.75	
992.3	43.29	1116.5	1274.9	2391.4	
992.4	48.16	1552.4	1628.5	3180.97	
992.5	53.40	2055.6	2018.3	4073.93	
992.6	58.92	2630.5	2440.7	5071.14	
992.7	64.58	3282.1	2895.3	6177.35	
992.8	70.30	4013.6	3381.2	7394.81	
992.9	76.48	4817.9	3897.1	8715.01	
993.0	83.19	5691.7	4442.2	10133.82	
993.1	90.18	6634.7	5012.5	11647.2	
993.2	97.22	7642.1	5607.6	13249.72	
993.3	104.37	8710.5	6226.5	14937.02	
993.4	111.83	9830.0	6868.3	16698.33	
993.5	119.62	10999.7	7532.1	18531.86	
993.6	127.59	12222.8	8216.7	20439.49	
993.7	135.97	13496.9	8921.8	22418.67	
993.8	144.53	14820.0	9646.8	24466.83	

# Stage-Storage Relationship

Basin:LE Map:246



## SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP

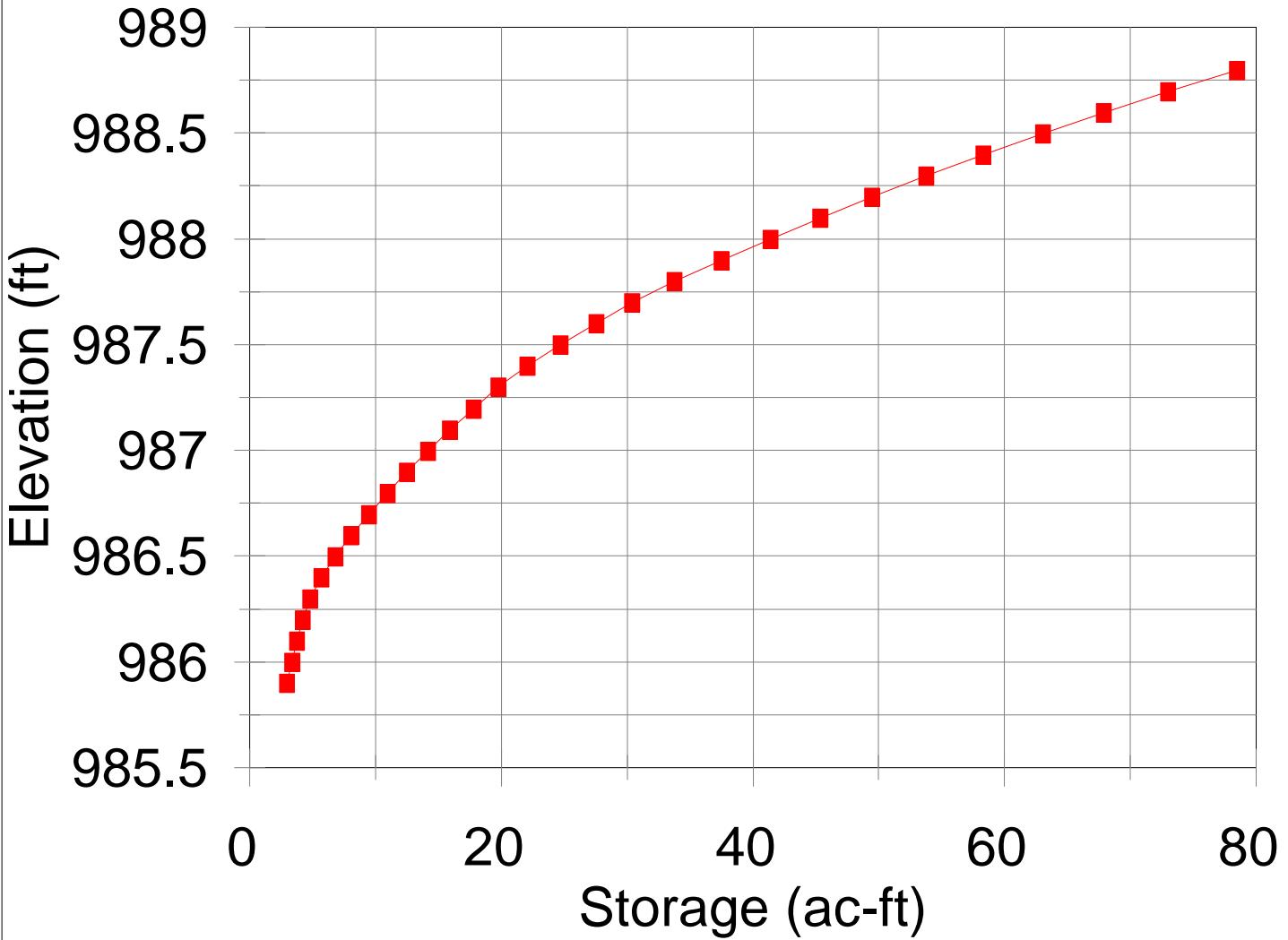
Basin: KD

Map: 245

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			Backwater (HEC-RAS)	
		SPRR	115th Ave	Total	Rating Curve	Stage (ft)
985.9	3.0		0	0		
986	3.4		3.27	3.27		
986.1	3.8		18.55	18.55		
986.2	4.2		50.29	50.29		
986.3	4.8		99.62	99.62		
986.4	5.7		167.89	167.89		
986.5	6.8		255.37	255.37	986.5	50
986.6	8.1		363.08	363.08	986.6	100
986.7	9.5		494.48	494.48		
986.8	11.0		651.99	651.99		
986.9	12.5		834.07	834.07		
987	14.2		1041.76	1041.76	987.0	500
987.1	15.9		1275.22	1275.22	987.1	750
987.2	17.8		1534.03	1534.03		
987.3	19.8		1819.12	1819.12	987.3	1000
987.4	22.1		2130.03	2130.03		
987.5	24.8		2467.09	2467.09		
987.6	27.6		2831.67	2831.67		
987.7	30.4		3225.44	3225.44		
987.8	33.8		3652.57	3652.57		
987.9	37.5		4114.96	4114.96		
988	41.4	0	4614.58	4614.58		
988.1	45.4	1.88	5153.04	5154.92		
988.2	49.5	10.71	5726.6	5737.31		
988.3	53.8	29.38	6332.61	6361.99		
988.4	58.3	59.04	6971.08	7030.12		
988.5	63.1	101.07	7640.46	7741.53		
988.6	67.9	156.8	8342.76	8499.56		
988.7	73.0	226.03	9080.87	9306.9		
988.8	78.5	309.88	9855.05	10164.93		
988.9	84.1					
989	89.8					
989.1	95.5					
989.2	101.3					
989.3	107.1					
989.4	112.9					
989.5	119.0					
989.6	125.4					
989.7	131.9					
989.8	138.6					
989.9	145.4					
990	152.4					

# Stage-Storage Relationship

Basin:KD Map:245



**SUB-BASIN STAGE-STORAGE-DISCHARGE RELATIONSHIP**

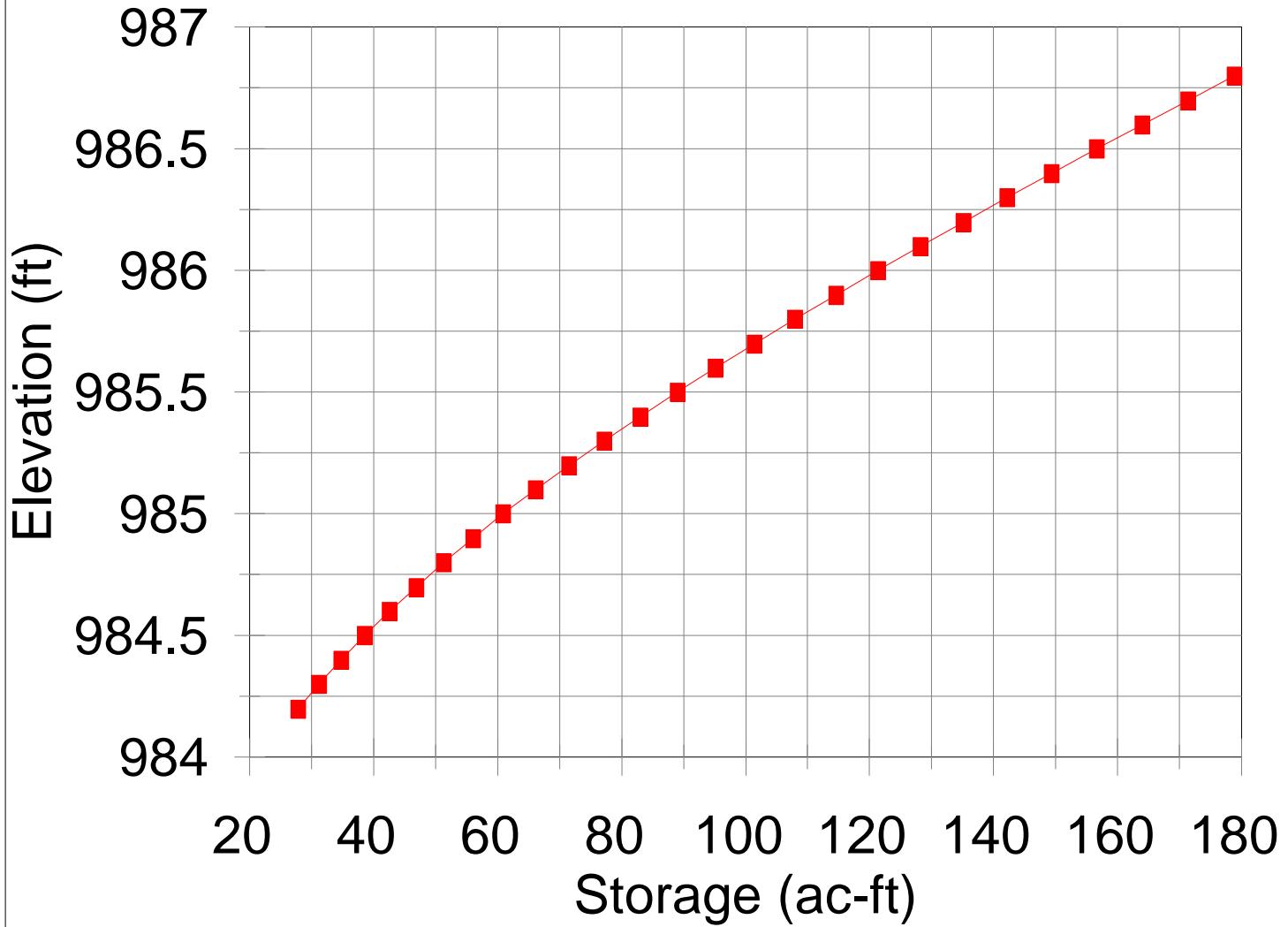
Basin: KA1

Map: 245

Stage (ft)	Storage (ac-ft)	Discharge (cfs)			
		SPRR	Unnamed Road	Total	
984.2	27.81		0	0	
984.3	31.20		0.16	0.16	
984.4	34.78		0.88	0.88	
984.5	38.59		2.45	2.45	
984.6	42.63		5.05	5.05	
984.7	46.87		8.85	8.85	
984.8	51.33		14.02	14.02	
984.9	56.03		20.69	20.69	
985.0	60.97		29.01	29.01	
985.1	66.16		39.1	39.1	
985.2	71.58		51.08	51.08	
985.3	77.21		64.87	64.87	
985.4	83.01		80.69		
985.5	89.01		98.63		
985.6	95.18		118.79		
985.7	101.52		141.24		
985.8	108.03		166.08		
985.9	114.67		193.39		
986.0	121.41		223.24		
986.1	128.25		255.39		
986.2	135.20		294.74		
986.3	142.27		352.05		
986.4	149.43		428.56		
986.5	156.66		531.19		
986.6	163.99		674.45	674.45	
986.7	171.40		863.66	863.66	
986.8	178.87		1106.91	1106.91	

# Stage-Storage Relationship

Basin:KA1 Map:245



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***Appendix F***  
***Channel***  
***Storage Routing Data***

Dibble & Associates  
 Durango ADMP Hydrology  
**Channel Storage Routing Data**

Reach		Reach Flow Rate								
		400 cfs	800cfs	1200cfs	1600cfs	2000cfs	2400cfs	2800cfs	3200cfs	3400cfs
RM 1.629 to 0.429	<b>Dysart to Agua Fria Confluence</b>	52.44	113.53	174.35	227.56	278.61	321.46	362.95	401.65	423.03
RM 2.622 to 1.629	<b>El Mirage to Dysart</b>	25.09	88.06	161.25	218.68	266.47	308.76	352.18	391.9	414.15
RM 3.618 to 2.622	<b>115th to El Mirage</b>	38.35	74.67	138.67	197.59	253.98	306.75	353.97	397.47	420.12
RM 4.364 to 3.618	<b>Buckeye to 115th/Southern</b>	49.63	80.55	107.06	129.82	149.16	166.98	184.12	200.16	207.6
RM 4.591 to 4.364	<b>115th to Buckeye</b>	11.28	18.3	26.43	34.26	40.26	46.19	51.68	56.49	58.95
RM 5.124 to 4.591	<b>SubHB to 115th</b>	23.26	45.2	72.96	102.69	132.92	160.62	189.36	212.06	222.49
RM 5.724 to 5.124	<b>107th to SubHB</b>	16.99	45.44	77.02	105.95	135.91	167.87	199.77	228.66	242.98
RM 6.731 to 5.724	<b>99th to 107th</b>	58.29	100.68	135.41	163.99	190.28	213.97	236.18	258.26	269.75
RM 7.848 to 6.731	<b>91st to 99th</b>	82.03	138.39	188.09	232.97	277.31	316.75	354.99	389.72	406.58

\*Storage values are obtained from HEC-RAS model; values are in Acre-ft.

Dibble & Associates  
Durango ADMP Hydrology  
Channel Storage Routing Data for the Southern Pacific Railroad (SPRR)

HEC-1 ID	Reach	Reach Flow Rate															
		100 cfs	200 cfs	400 cfs	600 cfs	800 cfs	989 cfs	1000 cfs	1200 cfs	1247 cfs	1400 cfs	1487 cfs	1500 cfs	1600 cfs	1700 cfs	1900 cfs	2200 cfs
(STORAGE VOLUME IN ACRE FEET)																	
RTWCWA	RM 11.536 to 10.534 35th to 43rd Ave.	63	103	168	-	242	-	267	296	-	317	-	-	332	338	354	375
RTWAVC	RM 10.534 to 9.535 43rd to 51st Ave.	-	-	146	178	193	201	-	-	208	-	212	-	-	-	-	-
RTDIVA	RM 9.535 to 8.531 51st to 59th Ave.	56	87	130	163	191	-	205	218	-	-	-	227	-	-	-	-
RTVAUC	RM 8.034 to 7.548 63rd to 67th Ave.	39	-	100	-	153	-	175	194	-	210	-	-	222	-	-	-

\*Storage values are obtained from HEC-2; values are in Acre-ft.

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***Appendix G***  
***HEC-1***  
***Peak Flow Summary***



Flood Control District of Maricopa County  
1084-6 - Durango ADMP 6-Hour Hydrology

**HEC-1 Peak Flow Summary**

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9/12/2001

Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	SUBWD	Hydrograph	0.390	139	243	323	431	514	595
	RTWDXA	Routed	0.390	114	212	291	396	476	551
	SUBXA	Hydrograph	0.250	194	292	357	445	513	580
	CPXA1	Combined	0.640	192	298	386	513	622	740
	DIZZ1	Diversion	0.640						
	DIXAO	Hydrograph	0.640	192	298	386	513	622	740
	RTXAWC	Routed	0.640	146	256	349	484	596	705
	SUBWB	Hydrograph	0.670	362	563	696	877	1,017	1,154
	RTWBWC	Routed	0.670	327	522	650	821	955	1,092
	SUBWC	Hydrograph	0.490	297	456	562	704	815	922
	CPWC	Combined	1.790	473	795	1,027	1,358	1,640	1,938
	DIQE	Diversion	1.790						
	DIWCWA	Hydrograph	1.790	473	795	1,027	1,358	1,640	1,938
	RTWCWA	Routed	1.790	163	294	381	586	748	948
	SUBWA	Hydrograph	0.490	406	606	740	919	1,059	1,196
	CPWA1	Combined	2.290	294	446	546	668	743	941
	SUBVD	Hydrograph	0.700	372	581	719	907	1,053	1,195
	RTVDWA	Routed	0.700	234	409	527	687	817	941
	CPWA2	Combined	2.980	294	474	624	834	998	1,159
	DIQD	Diversion	2.980	19	103	225	401	553	707
	DIWAVC	Hydrograph	2.980	272	371	399	433	445	452
	RTWAVC	Routed	2.980	145	218	269	322	351	375
	SUBVC	Hydrograph	0.490	390	589	723	902	1,041	1,177
	CPVC1	Combined	3.470	239	376	467	589	684	776
	SUBVB	Hydrograph	0.720	543	826	1,014	1,265	1,460	1,651
	RTVBVC	Routed	0.720	261	451	586	769	911	1,049
	CPVC2	Combined	4.190	322	569	745	985	1,174	1,359
	DIVA	Diversion	4.190	20	31	31	32	32	32
	DIVCQA	Hydrograph	4.190	302	537	714	954	1,142	1,327
	RTVCQA	Routed	4.190	201	380	518	713	870	1,024
	SUBQA	Hydrograph	0.490	214	358	455	584	683	779
	CPQA2	Combined	4.680	215	451	641	905	1,117	1,325
	RSQA	Routed	4.680	214	446	629	887	1,107	1,311
	DIPF	Diversion	4.680	97	190	262	365	445	490
	DIQAPF	Hydrograph	4.680	117	257	366	521	662	822
	RTQAJH	Routed	4.680	113	247	352	502	623	781
	SUBQE	Hydrograph	0.910	573	845	1,028	1,275	1,467	1,654
	DRQE	Hydrograph	1.790						
	RTDIQE	Routed	1.790						
	CPQE	Combined	0.910	573	845	1,028	1,275	1,467	1,654
	RSQE	Routed	0.910	409	701	897	1,172	1,377	1,575
	RTQEQC	Routed	0.910	367	639	836	1,075	1,283	1,479
	SUBQD	Hydrograph	0.250	218	314	379	466	534	600
	DRQD	Hydrograph	2.980	19	103	225	401	553	707
	RTDIQD	Routed	2.980	2	32	101	242	374	511
	CPQD	Combined	0.250	218	314	379	466	534	665
	RSQD	Routed	0.250	177	276	339	441	513	661
	DIQB	Diversion	0.250	29	49	61	94	125	190
	DIQDQB	Hydrograph	0.250	148	228	277	347	387	471
	RTQDQC	Routed	0.250	52	100	134	243	338	423
	SUBQC	Hydrograph	0.610	368	571	705	884	1,024	1,160
	CPQC	Combined	1.770	470	900	1,207	1,604	1,914	2,230
	DISR	Diversion	1.770	376	720	966	1,283	1,531	1,784

Flood Control District of Maricopa County  
 1084-6 - Durango ADMP 6-Hour Hydrology  
**HEC-1 Peak Flow Summary**

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9/12/2001

Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	DIQCR	Hydrograph	1.770	94	180	241	321	383	446
	RTQCJI	Routed	1.770	51	104	145	203	252	299
	SUBQB	Hydrograph	0.500	263	412	513	647	751	852
	DRQB	Hydrograph	0.250	29	49	61	94	125	190
	RTDIQB	Routed	0.250	11	24	35	54	99	170
	CPQB	Combined	0.500	263	412	513	647	751	853
	RSQB	Routed	0.500	65	216	325	477	599	705
	RTQBJH	Routed	0.500	46	154	248	382	488	597
	SUBJH	Hydrograph	0.520	325	529	661	835	967	1,096
	CPJH	Combined	7.470	182	346	524	790	1,006	1,219
	RTJHJI	Routed	7.470	127	334	508	770	984	1,196
	SUBJI	Hydrograph	0.310	234	373	461	581	672	760
	CPJI	Combined	7.780	127	332	506	767	980	1,193
	DISR1	Diversion	7.780	127	332	506	767	980	1,193
	SUBPF	Hydrograph	0.500	420	642	791	992	1,147	1,297
	RETPF	Diversion	0.500	55	29	23	21	21	19
	RETPF	Hydrograph	0.500	420	642	791	992	1,147	1,297
	DRPF	Hydrograph	4.680	97	190	262	365	445	490
	RTDIPF	Routed	4.680	95	185	257	359	436	484
	@CPPF	Combined	5.190	420	642	791	992	1,147	1,297
	RSPF	Routed	5.190	59	139	234	344	425	494
	DIPE	Diversion	5.190						
	DIPFPE	Hydrograph	5.190	59	139	234	344	425	494
	RTPFJF	Routed	5.190	59	134	228	338	419	488
	SUBUD	Hydrograph	0.760	284	486	624	808	950	1,087
	DIUA	Diversion	0.760	70	119	152	196	230	263
	DIUDUA	Hydrograph	0.760	214	367	472	612	720	824
	RTUDVA	Routed	0.760	120	244	333	453	547	637
	SUBVA	Hydrograph	0.490	408	607	740	919	1,059	1,195
	DRVVA	Hydrograph	4.190	20	31	31	32	32	32
	RTDIVA	Routed	4.190	5	10	12	17	20	22
	CPVA1	Combined	0.490	408	607	740	919	1,059	1,195
	CPVA2	Combined	1.250	332	502	618	774	900	1,024
	DIUC	Diversion	1.250	330	473	546	626	669	701
	DIVAPE	Hydrograph	1.250	3	29	72	148	231	323
	SUBPE	Hydrograph	0.500	406	630	781	987	1,147	1,303
	DRPE	Hydrograph	5.190						
	RTDIPE	Routed	5.190						
	CPPE	Combined	1.760	406	630	781	987	1,147	1,303
	RSPE	Routed	1.760	9	153	346	623	835	1,111
	DIPD	Diversion	1.760					1	2
	DIPEPD	Hydrograph	1.760	9	153	346	622	835	1,109
	RTPEJF	Routed	1.760	6	60	140	299	448	606
	SUBJF	Hydrograph	0.500	515	765	934	1,161	1,337	1,509
	CPJF	Combined	7.450	231	364	453	571	663	786
	RTJFJG	Routed	7.450	77	142	219	374	515	692
	SUBJG	Hydrograph	0.900	617	941	1,159	1,450	1,676	1,897
	CPJG	Combined	8.350	371	595	745	948	1,108	1,266
	CPJGSR	Combined	16.120	329	535	673	859	1,005	1,150
	DISR2	Diversion	16.120	329	535	673	859	1,005	1,150
	DRUC	Hydrograph	1.250	330	473	546	626	669	701
	RTVAUC	Routed	1.250	102	231	310	396	476	544
	SUBUC	Hydrograph	0.480	280	446	557	703	817	927

Flood Control District of Maricopa County  
1084-6 - Durango ADMP 6-Hour Hydrology

**HEC-1 Peak Flow Summary**

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>									
	@CPUC1	Combined	1.730	214	353	444	565	659	750
	SUBUA	Hydrograph	0.560	253	414	522	666	777	886
	DRUA	Hydrograph	0.760	70	119	152	196	230	263
	RTDIUA	Routed	0.760	19	37	52	74	91	114
	@CPUA	Combined	1.320	253	414	522	666	777	886
	DITB	Diversion	1.320	42	71	91	117	137	156
	DIUAUC	Hydrograph	1.320	169	286	364	467	546	624
	RTUAUC	Routed	1.320	91	188	255	348	418	489
	CPUC2	Combined	3.050	214	353	444	565	689	812
	DIUB	Diversion	3.050	193	331	416	512	598	684
	DIUCPC	Hydrograph	3.050		9	52	91	129	
	RTUCPC	Routed	3.050		1	19	45	74	
	SUBPC	Hydrograph	0.300	317	473	578	717	826	932
	CPPC	Combined	3.350	162	253	313	392	455	515
	RSPC	Routed	3.350	5	5	5	8	41	76
	RTPCNB	Routed	3.350	5	5	5	7	30	61
	SUBNB	Hydrograph	0.440	289	447	554	697	808	917
	CPNB1	Combined	3.790	179	291	365	464	541	616
	DINA	Diversion	3.790	117	188	236	299	348	396
	DINBNA	Hydrograph	3.790	63	103	129	165	193	220
	RTNBJD	Routed	3.790	25	43	58	78	95	114
	SUBPD	Hydrograph	0.440	362	568	707	892	1,035	1,174
	DRPD	Hydrograph	1.760					1	2
	CPPD2	Combined	0.440	362	568	707	892	1,036	1,176
	RSPD	Routed	0.440			2	13	51	94
	RTPDNC	Routed	0.440			2	12	43	82
	SUBNC	Hydrograph	0.310	175	311	404	524	620	714
	CPNC	Combined	0.750	157	275	360	472	560	647
	RTNCJE	Routed	0.750	93	172	240	328	400	470
	SUBJE1	Hydrograph	0.250	225	354	440	554	644	732
	CPJE1	Combined	1.000	179	290	363	461	538	612
	RTJEJD	Routed	1.000	141	236	305	394	473	548
	SUBJD	Hydrograph	0.500	226	377	481	619	727	831
	CPJD	Combined	5.300	216	389	510	672	793	915
	DIJC	Diversion	5.300	80	142	186	244	288	331
	DIJDJC	Hydrograph	5.300	136	247	324	428	506	584
	RTJDFC	Routed	5.300	84	165	234	332	413	495
	SUBJE2	Hydrograph	0.250	259	381	462	573	658	742
	RETJE	Diversion	0.250	151	145	133	128	139	123
	RETJE2	Hydrograph	0.250	259	381	462	573	658	742
	RTJEFC	Routed	0.250	111	229	318	430	517	595
	SUBFC	Hydrograph	0.360	297	452	557	697	805	910
	CPFC	Combined	5.910	179	379	528	729	891	1,052
	CPFCSR	Combined	22.030	141	303	427	595	731	864
	DISR3	Diversion	22.030	141	303	427	595	731	864
	DISRX	Hydrograph	22.030						
	DRUCUB	Hydrograph	3.050	193	331	416	512	598	684
	RTUCUB	Routed	3.050	188	326	414	512	596	682
	SUBUB	Hydrograph	0.130	70	119	151	195	228	260
	@CPUB	Combined	2.420	223	392	498	619	714	809
	DIUE	Diversion	2.420						
	DIUBSF	Hydrograph	2.420	223	392	498	619	714	809
	RTUBSF	Routed	2.420	206	375	484	606	703	799

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<b>01</b>	SUBTB	Hydrograph	0.890	269	460	591	767	904	1,037
	DRTB	Hydrograph	1.320	42	71	91	117	137	156
	RTDITB	Routed	1.320	27	52	68	90	111	129
	CPTB	Combined	0.890	270	461	593	772	913	1,051
	DITA	Diversion	0.890	67	113	144	187	221	254
	DITBTA	Hydrograph	0.890	203	349	449	585	692	797
	RTTBSF	Routed	0.890	133	261	350	475	575	671
	SUBSF	Hydrograph	0.380	53	126	175	244	298	349
	CPSF	Combined	3.680	296	618	846	1,138	1,368	1,593
	RSSF	Routed	3.680	236	576	812	1,104	1,327	1,547
	DIRJ1	Diversion	3.680	71	173	244	331	398	464
	DISFRJ	Hydrograph	3.680	165	403	569	773	929	1,083
	RTSFSH	Routed	3.680	160	394	560	764	920	1,073
	SUBSH	Hydrograph	0.100	98	149	183	228	263	298
	CPSH	Combined	3.790	161	395	561	766	922	1,075
	RSSH	Routed	3.790	74	211	412	690	874	1,050
	DIRJ2	Diversion	3.790	47	151	321	563	724	879
	DISHRJ	Hydrograph	3.790	27	60	91	127	150	172
	RTSHSG	Routed	3.790	26	58	84	117	140	161
	SUBTA	Hydrograph	0.240	26	72	103	149	186	222
	DRTA	Hydrograph	0.890	67	113	144	187	221	254
	RTDITA	Routed	0.890	55	98	131	172	206	239
	@CPTA	Combined	1.130	60	132	192	270	333	396
	RTTASG	Routed	1.130	55	124	182	261	324	389
	SUBSG	Hydrograph	0.140	72	116	146	186	217	247
	CPSG	Combined	5.050	55	124	182	261	324	389
	RSSG	Routed	5.050	26	73	135	241	307	374
	DIRJ4	Diversion	5.050	12	43	88	172	225	279
	DISGRJ	Hydrograph	5.050	14	30	47	69	82	95
	RTSGSE	Routed	5.050	14	30	45	66	80	93
	SUBSC	Hydrograph	0.450	27	91	136	192	240	294
	DISD	Diversion	0.450	15	49	73	104	130	159
	DISCSD	Hydrograph	0.450	12	42	62	88	111	135
	RTSCSE	Routed	0.450	8	31	49	71	91	113
	SUBSE	Hydrograph	0.130	122	196	245	310	360	409
	CPSE	Combined	5.630	47	81	106	140	167	193
	RSSE	Routed	5.630	3	18	34	79	134	173
	DIRJ5	Diversion	5.630	3	18	34	79	134	173
	DISERJ	Hydrograph	5.630						
	RTSERI	Routed	5.630						
	SUBRJ	Hydrograph	0.160	50	86	113	151	179	207
	CPRJ1	Hydrograph	3.680	71	173	244	331	398	464
	RTSFRJ	Routed	3.680	61	155	226	317	384	452
	CPRJ2	Hydrograph	3.790	47	151	321	563	724	879
	RTSHRJ	Routed	3.790	47	143	302	542	707	859
	@CPRJ3	Combined	3.950	79	249	495	836	1,070	1,299
	RTRJ3	Routed	3.950	79	238	463	791	1,028	1,249
	CPRJ4A	Hydrograph	5.050	12	43	88	172	225	279
	CPRJ4B	Combined	3.950	91	283	542	928	1,210	1,470
	RTSGRJ	Routed	3.950	90	279	530	911	1,190	1,453
	CPRJ5	Hydrograph	5.630	3	18	34	79	134	173
	RTSERJ	Routed	5.630	3	17	32	73	121	167
	@CPRJ6	Combined	4.590	92	277	516	966	1,283	1,575

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<b>01</b>	RSRJ	Routed	4.590	90	252	448	828	1,128	1,405
	DIPA2	Diversion	4.590		2	5	123	256	386
	DIRJPA	Hydrograph	4.590	90	249	443	705	872	1,019
	RTRJRI	Routed	4.590	90	246	440	696	863	1,010
	DIOE3	Diversion	4.590		27	69	149	202	249
	DIRIOE	Hydrograph	4.590	90	219	371	547	661	761
	RTRIRI	Routed	4.590	90	218	369	544	659	760
	SUBUE	Hydrograph	0.060	38	66	84	107	125	143
	DRUE	Hydrograph	2.420						
	CPUE	Combined	0.060	38	66	84	107	125	143
	RSUE	Routed	0.060						1
	RTUEPB	Routed	0.060						1
	SUBPB	Hydrograph	0.440	166	283	366	476	561	644
	CPPB1	Combined	0.500	166	283	366	476	561	643
	DIPA1	Diversion	0.500	32	53	68	88	103	118
	DIPBPA	Hydrograph	0.500	134	230	298	388	458	526
	RTPBNA	Routed	0.500	50	100	139	206	258	313
	SUBNA	Hydrograph	0.980	96	232	333	474	584	689
	CPNA1	Hydrograph	3.790	117	188	236	299	348	396
	RTDINA	Routed	3.790	40	72	98	139	173	207
	@CPNA	Combined	2.160	95	248	387	617	808	994
	RTNAJC	Routed	2.160	81	215	340	532	693	854
	SUBJC	Hydrograph	0.990	107	245	350	498	613	725
	RETJC	Diversion	0.990	97	150	160	160	165	190
	RETJC	Hydrograph	0.990	89	245	350	498	613	725
	DRJC	Hydrograph	5.300	80	142	186	244	288	331
	RTDIJC	Routed	5.300	39	72	101	150	192	236
	@CPJC	Combined	3.150	109	299	480	772	1,025	1,283
	DIJB	Diversion	3.150	50	138	221	355	472	590
	DIJCJB	Hydrograph	3.150	59	162	259	417	554	693
	RTJCFB	Routed	3.150	52	145	238	385	513	643
	SUBFB	Hydrograph	0.660	104	234	326	464	572	675
	CPF2	Combined	3.810	52	144	238	384	512	646
	DISRX	Diversion	3.810	50	142	236	383	512	646
	DIFBSR	Hydrograph	3.810						
	SUBPA	Hydrograph	0.480	139	242	322	430	512	593
	DRPA	Hydrograph	0.500	32	53	68	88	103	118
	RTDIPA	Routed	0.500	8	14	20	28	34	41
	DRPA2	Hydrograph	4.590		2	5	123	256	386
	RTRJPA	Routed	4.590		2	4	76	185	313
	@CPPA	Combined	5.070	139	242	322	430	513	608
	DIOE	Diversion	5.070	13	29	40	55	67	78
	DIPAOE	Hydrograph	5.070	57	130	183	252	305	357
	RTPAMH	Routed	5.070	29	75	119	179	228	276
	SUBMH	Hydrograph	0.240	49	117	163	228	277	325
	CPMH	Combined	5.310	29	80	133	215	282	350
	RTMHMD	Routed	5.310	22	68	114	187	249	311
	SUBMD	Hydrograph	0.250	115	181	225	285	331	376
	RETMED	Diversion	0.250	115	181	225	285	331	376
	RETMED	Hydrograph	0.250			43	184	253	319
	CPMD	Combined	9.370	22	68	117	190	260	331
	DIJB1	Diversion	9.370	4	13	22	40	54	68
	DIMDJB	Hydrograph	9.370	15	48	83	150	206	263

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	DIMFX	Diversion	9.370	15	48	83	150	206	263
	DIMDMF	Hydrograph	9.370						
	SUBMI	Hydrograph	0.410	157	285	376	498	591	681
	RETRMI	Diversion	0.410	157	285	368	440	474	483
	RETRMI	Hydrograph	0.410		197	357	498	591	681
	SUBMG	Hydrograph	0.080	57	93	118	151	177	202
	RETRMG	Diversion	0.080	57	93	118	151	177	183
	RETRMG	Hydrograph	0.080			27	86	142	200
	CPMG	Combined	0.490		197	357	583	726	836
	RTMGJB	Routed	0.490		30	82	181	263	348
	SUBJB	Hydrograph	0.990	17	101	183	293	389	491
	CPJB	Combined	1.480	10	74	153	265	359	511
	DRJB	Hydrograph	3.150	50	138	221	355	472	590
	RTDIJB	Routed	3.150	44	123	201	324	431	539
	CPJB2	Hydrograph	9.370	4	13	22	40	54	68
	RDIJB1	Routed	9.370	2	9	15	28	40	52
	@CPJB	Combined	4.140	43	127	237	413	572	745
	DIEE	Diversion	4.140	15	46	85	149	206	268
	DIJBE	Hydrograph	4.140	27	81	151	264	366	477
	RTJBFA	Routed	4.140	22	64	122	232	329	434
	SUBFA	Hydrograph	0.760	134	235	314	420	503	586
	CPFA	Combined	4.900	82	177	245	338	412	486
	DISRX2	Diversion	4.900	82	177	245	338	412	486
	DIFASR	Hydrograph	4.900						
	@CPRI1	Combined	5.160	90	218	369	544	659	760
	SUBRI	Hydrograph	0.230	100	178	233	307	365	420
	SUBSB	Hydrograph	0.170	36	83	116	160	194	226
	RSSB	Routed	0.170	4	42	66	106	148	184
	SUBSD	Hydrograph	0.170	29	86	121	172	213	253
	DRSD	Hydrograph	0.450	15	49	73	104	130	159
	@CPSD	Combined	0.790	29	95	160	254	338	431
	RSSD	Routed	0.790	30	95	160	254	338	433
	RTSDRI	Routed	0.790	21	91	153	244	329	418
	CPRI2	Combined	6.180	102	216	369	545	663	772
	RSRI	Routed	6.180	86	206	358	540	662	771
	RTRIRH	Routed	6.180	84	191	337	498	617	723
	SUBSA	Hydrograph	0.420	247	391	487	615	715	811
	DIRF	Diversion	0.420	123	195	243	307	357	406
	DISARF	Hydrograph	0.420	123	195	243	307	357	406
	RTSARH	Routed	0.420	44	83	117	163	202	239
	SUBRH	Hydrograph	0.250	43	102	142	198	243	285
	CPRH	Combined	6.850	83	190	336	502	626	737
	RSRH	Routed	6.850	83	190	336	503	625	735
	DIOE2	Diversion	6.850						
	CPRH2	Hydrograph	6.850	83	190	336	503	625	735
	RRHOG1	Routed	6.850	83	189	334	500	622	732
	DIOD1	Diversion	6.850						
	DIOG1	Hydrograph	6.850	83	189	334	500	622	732
	RRHOG2	Routed	6.850	82	187	329	493	617	727
	SUBRG	Hydrograph	0.110	140	199	239	293	335	376
	RETRG	Diversion	0.110	140	159	191	143	119	134
	RETRG	Hydrograph	0.110	44	184	236	293	335	376
	RTRGRF	Routed	0.110	5	20	34	55	74	93

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<b>01</b>	SUBRF	Hydrograph	0.630	162	282	366	479	566	652
	DRRF	Hydrograph	0.420	123	195	243	307	357	406
	RTDIRF	Routed	0.420	25	46	63	90	115	140
	@CPRF	Combined	1.160	162	282	366	494	598	700
	DIRE	Diversion	1.160	29	54	73	99	120	140
	DIRFRE	Hydrograph	1.160	117	217	291	395	478	560
	RTRFOG	Routed	1.160	76	164	232	326	403	476
	SUBOG	Hydrograph	0.490	198	325	409	523	612	699
	CPOG	Combined	8.500	126	276	452	735	977	1,222
	RSOG	Routed	8.500	86	262	426	688	919	1,186
	DIOD2	Diversion	8.500	14	45	95	177	253	350
	DIOGOD	Hydrograph	8.500	72	217	332	511	666	835
	RTOGOF	Routed	8.500	71	213	327	505	657	823
	SUBOF	Hydrograph	0.250	207	308	377	468	539	608
	SUBRE	Hydrograph	0.360	79	141	183	241	286	329
	CPRE	Hydrograph	1.160	29	54	73	99	120	140
	RTDIRE	Routed	1.160	13	28	41	59	75	93
	@CPRE	Combined	1.530	79	141	183	241	286	329
	RTREOF	Routed	1.530	63	122	163	217	260	302
	CPOF	Combined	10.280	221	308	452	680	872	1,079
	RSOF	Routed	10.280	55	165	295	520	763	1,008
	RTFOB	Routed	10.280	55	164	290	513	749	982
	SUBOB	Hydrograph	0.440	336	498	608	759	877	992
	SUBRD	Hydrograph	0.380	80	148	194	257	305	351
	DIQB	Diversion	0.380	32	59	78	103	122	141
	DIRDOB	Hydrograph	0.380	48	89	117	154	183	211
	RTRDRC	Routed	0.380	19	40	56	82	101	121
	SUBRC	Hydrograph	0.680	26	107	166	248	323	397
	CPRC	Combined	1.060	18	88	146	229	302	374
	RTRCRB	Routed	1.060	12	49	90	154	223	291
	SUBRB	Hydrograph	0.550	19	103	166	246	315	391
	CPRB	Combined	1.610	11	48	104	184	251	323
	DIKA3	Diversion	1.610	5	24	52	92	126	162
	DIRBKA	Hydrograph	1.610	5	24	52	92	126	162
	RTRBRA	Routed	1.610	3	15	34	70	105	145
	SUBRA	Hydrograph	0.220	4	36	63	96	121	149
	CPRA	Combined	1.830	3	15	33	68	104	145
	DIKA4	Diversion	1.830		4	13	44	80	119
	DIRAKA	Hydrograph	1.830	2	12	20	25	25	25
	DIAFX	Diversion	1.830	2	12	20	25	25	25
	DIKAAF	Hydrograph	1.830						
	CPOB2	Hydrograph	0.380	32	59	78	103	122	141
	RTDIOB	Routed	0.380	8	18	26	37	47	56
	@CPOB	Combined	9.570	336	498	845	816	860	1,007
	RSOB	Routed	9.570	27	132	266	413	528	679
	RTOBLE	Routed	9.570	27	131	265	413	527	676
	SUBLE	Hydrograph	0.250	18	65	102	147	183	223
	CPLE	Combined	9.820	26	130	265	412	526	674
	RSLE	Routed	9.820	23	127	264	411	525	668
	DILD	Diversion	9.820		1	28	83	137	206
	DILELD	Hydrograph	9.820	23	127	235	328	388	462
	RTLEKD	Routed	9.820	23	126	235	328	387	460
	SUBKD	Hydrograph	0.700	14	74	127	196	254	316

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<b>01</b>	CPKD	Combined	10.520	23	126	234	326	386	458
	RSKD	Routed	10.520	22	122	233	326	385	453
	RKDKA1	Routed	10.520	22	121	233	325	385	453
	RSKA1	Routed	10.520	3	45	103	197	266	322
	DILA	Diversion	10.520			19	66	109	
	DIKALA	Hydrograph	10.520	3	45	103	178	200	213
	RKDKA2	Routed	10.520	3	45	103	178	200	213
	SUBKA	Hydrograph	1.350	196	383	531	745	916	1,084
	RETKA	Diversion	1.350	191	278	326	368	343	367
	RETKA	Hydrograph	1.350	126	383	531	745	916	1,084
	CPKA3	Hydrograph	1.610	5	24	52	92	126	162
	RTDIKA	Routed	1.610	5	19	37	72	112	153
	CPKA4	Hydrograph	1.830		4	13	44	80	119
	CPKA	Combined	11.870	425	506	531	745	916	1,084
	DIKB	Diversion	11.870			11	127	278	435
	DIKAKB	Hydrograph	11.870	72	209	316	384	388	388
	SUBEC	Hydrograph	0.040	1	6	10	15	19	24
	SUBAD	Hydrograph	0.440	11	70	115	171	217	269
	CPAD	Combined	12.350	72	210	332	449	497	544
	SUBAC	Hydrograph	0.460	25	97	147	211	266	328
	SUBAB	Hydrograph	0.430	58	133	181	259	321	381
	CPSR7	Combined	13.230	80	259	447	678	817	955
	SUBOE	Hydrograph	0.470	132	233	300	400	481	560
	RETOE	Diversion	0.470	102	103	93	87	78	88
	RETOE	Hydrograph	0.470	132	233	300	400	481	560
	CPOE1	Hydrograph	5.070	13	29	40	55	67	78
	RTDIOE	Routed	5.070	3	8	13	19	25	37
	CPOE2	Hydrograph	6.850						
	CPOE3	Hydrograph	4.590		27	69	149	202	249
	@CPOE	Combined	5.290	182	233	300	401	483	562
	DIOD	Diversion	5.290	11	23	33	46	56	66
	DIOEOD	Hydrograph	5.290	57	112	160	228	281	332
	RTOEMF	Routed	5.290	14	40	66	108	151	194
	SUBMF	Hydrograph	0.970	69	193	283	408	506	600
	CPMF	Hydrograph	9.370	15	48	83	150	206	263
	RTMDMF	Routed	9.370	10	34	56	102	155	210
	CPMF1	Combined	6.260	72	193	284	408	506	600
	DIEB	Diversion	6.260	12	63	101	158	210	269
	DIMFEB	Hydrograph	6.260	14	71	115	181	242	312
	RTMFMC	Routed	6.260	7	41	77	144	203	267
	SUBOD	Hydrograph	0.510	186	309	394	507	596	681
	RETOD	Diversion	0.510	38	27	20	15	13	13
	RETOD	Hydrograph	0.510	186	309	394	507	596	681
	DROD	Hydrograph	5.290	11	23	33	46	56	66
	RTDIOD	Routed	5.290	2	5	9	19	26	34
	DROD2	Hydrograph	6.850						
	DROD3	Hydrograph	8.500	14	45	95	177	253	350
	@CPOD	Combined	7.570	187	310	394	508	596	681
	DIOC	Diversion	7.570	22	42	56	76	92	108
	DIODOC	Hydrograph	7.570	99	192	256	348	421	491
	RTODMC	Routed	7.570	44	103	162	255	335	423
	SUBMC	Hydrograph	1.000	100	238	337	474	579	683
	@CPMC1	Combined	10.040	50	168	288	486	647	808

Flood Control District of Maricopa County  
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**HEC-1 Peak Flow Summary**

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	DIMB	Diversion	10.040	20	66	111	187	248	309
	DIMCMB	Hydrograph	10.040	30	102	176	299	399	499
	RTMCIE	Routed	10.040	28	97	169	286	381	481
	DREB	Hydrograph	6.260	12	63	101	158	210	269
	SUBEB	Hydrograph	0.140	13	46	67	97	124	149
	SUBED	Hydrograph	0.480	13	67	108	157	202	251
	CPEB1	Combined	0.620	19	86	138	206	267	331
	CPEB2	Combined	0.620	55	177	268	391	495	602
	RTEBIE	Routed	0.620	36	120	184	276	356	450
	SUBIE	Hydrograph	0.300	36	88	124	174	213	250
	SUBID	Hydrograph	0.560	30	112	169	246	317	388
	CPIE1	Combined	1.490	40	142	231	356	461	564
	CPIE2	Combined	11.530	32	127	228	403	555	709
	RTIEIB	Routed	11.530	30	121	218	384	537	693
	SUBIB	Hydrograph	0.480	49	123	176	250	308	364
	SUBIC	Hydrograph	0.510	12	67	109	161	206	256
	CPIB1	Combined	12.520	49	123	218	383	540	701
	SUBOC	Hydrograph	0.310	204	308	377	470	543	613
	DROC	Hydrograph	7.570	22	42	56	76	92	108
	RTDIOC	Routed	7.570	7	17	27	43	59	74
	CPOC	Combined	0.310	204	308	377	470	543	613
	RTOCMB	Routed	0.310	69	118	155	218	265	316
	SUBMB	Hydrograph	1.000	86	227	329	469	578	684
	DRMB	Hydrograph	10.040	20	66	111	187	248	309
	RTDIMB	Routed	10.040	14	53	91	159	219	284
	@CPMB	Combined	11.880	85	227	329	488	625	756
	RTMBIB	Routed	11.880	52	175	281	435	560	685
	@CPIB2	Combined	14.350	66	240	416	691	924	1,191
	RTIBIA	Routed	14.350	65	234	402	648	893	1,160
	SUBME	Hydrograph	0.330	20	79	122	176	220	268
	RTMEIA	Routed	0.330	7	36	60	95	124	163
	SUBIA	Hydrograph	0.310	46	117	163	231	290	347
	CPIA	Combined	14.990	66	236	410	662	904	1,175
	RTIAHB	Routed	14.990	64	223	387	646	887	1,143
	SUBHB	Hydrograph	0.340	32	111	164	233	293	356
	CPHB1	Combined	15.330	64	223	387	646	887	1,143
	SUBLD	Hydrograph	0.280	106	191	247	329	395	460
	DRLD	Hydrograph	9.820		1	28	83	137	206
	RTDILD	Routed	9.820			27	82	137	202
	@CPLD	Combined	10.100	121	191	247	330	441	705
	RTLDMA	Routed	10.100	34	65	99	153	194	236
	SUBMA	Hydrograph	0.250	3	42	76	119	151	185
	CPMA	Combined	10.350	34	65	104	183	251	318
	RTMAHB	Routed	10.350	17	33	53	99	144	194
	@CPHB2	Combined	15.980	67	230	398	655	892	1,202
	RTHBDA	Routed	15.980	66	228	395	654	891	1,199
	SUBDA	Hydrograph	0.330	55	116	160	225	275	324
	CPDA	Combined	16.310	66	228	395	654	891	1,199
	RTDACC	Routed	16.310	66	226	392	652	887	1,192
	SUBCC	Hydrograph	0.980	87	240	348	515	651	780
	CPCC1	Combined	17.290	66	226	392	652	887	1,192
	SUBEE	Hydrograph	0.960	19	88	152	238	314	395
	CPEE1	Hydrograph	4.140	15	46	85	149	206	268

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	RTDIEE	Routed	4.140	15	43	81	144	201	263
	CPEC	Combined	0.960	21	91	169	279	382	493
	RTEEEA	Routed	0.960	16	51	85	162	269	387
	SUBEA	Hydrograph	1.320	13	92	186	317	429	549
	CPEA	Combined	2.280	17	109	207	290	382	499
	RTEADC	Routed	2.280	12	34	76	181	287	395
	SUBDC	Hydrograph	0.830	31	136	222	337	441	546
	CPDC	Combined	3.110	14	65	139	245	343	451
	RTDCCC	Routed	3.110	11	37	92	190	277	362
	SUBDD	Hydrograph	0.130	5	37	61	91	116	142
	RTDDCC	Routed	0.130	2	20	36	59	77	98
	CPCC2	Combined	20.530	66	226	392	668	979	1,274
	RTCCCB	Routed	20.530	60	205	374	660	922	1,232
	SUBCB	Hydrograph	0.740	78	197	280	392	480	565
	CPCB1	Combined	21.270	60	205	374	660	922	1,232
	SUBLB	Hydrograph	0.250	4	41	72	111	141	173
	RTLBHA	Routed	0.250	2	27	53	85	114	145
	SUBHA	Hydrograph	0.150	10	42	65	95	119	145
	CPHA	Combined	0.400	10	42	65	95	124	160
	RTHAGD	Routed	0.400	3	20	40	70	94	123
	SUBKC	Hydrograph	0.260	4	47	83	129	163	199
	RTKCGD	Routed	0.260	1	13	29	50	67	87
	SUBGD	Hydrograph	0.840	66	202	298	438	550	657
	SUBGC	Hydrograph	0.220	64	132	175	239	292	343
	RTGCGD	Routed	0.220	21	48	70	106	144	181
	CPGD	Combined	1.720	66	201	296	464	605	743
	RTGDCB	Routed	1.720	26	138	240	394	521	647
	CPCB	Combined	22.990	61	205	374	660	921	1,232
	RTCBCA	Routed	22.990	61	202	364	642	893	1,199
	SUBCA	Hydrograph	0.980	69	190	278	399	493	584
	CPCA1	Combined	23.970	61	221	421	642	893	1,198
	SUBGB	Hydrograph	0.220	55	117	157	214	261	309
	RTGBCA	Routed	0.220	13	32	46	69	90	115
	CPCA	Combined	24.190	61	224	429	641	893	1,198
	RTCABC	Routed	24.190	61	219	416	634	883	1,185
	SUBBC	Hydrograph	0.630	33	98	147	212	267	327
	CPBC	Combined	24.820	61	222	418	634	883	1,185
	SUBBB	Hydrograph	0.250	28	69	98	140	174	206
	RTBBBBA	Routed	0.250	10	32	50	79	102	127
	SUBBA	Hydrograph	0.340	45	90	122	173	212	250
	CPBA	Combined	0.590	42	87	119	168	207	245
	RTBAAA	Routed	0.590	34	76	107	155	192	228
	SUBAA	Hydrograph	0.490	28	68	93	135	170	204
	CPAA	Combined	1.080	40	117	175	262	332	399
	SUBLC	Hydrograph	0.120	85	145	184	238	279	319
	RETLCL	Diversion	0.120	85	145	184	238	279	319
	RETLCL	Hydrograph	0.120					43	
	RTLCLA	Routed	0.120					5	
	SUBLA	Hydrograph	0.510	85	183	248	336	411	490
	RETLA	Diversion	0.510	85	183	248	336	411	490
	RETLA	Hydrograph	0.510				163	309	441
	DRDILA	Hydrograph	10.520				19	66	109
	RTDILA	Routed	10.520				19	66	108

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	@CPLA	Combined	11.430				218	380	574
	RTLAKB	Routed	11.430				14	59	103
	SUBKB	Hydrograph	0.420		51	159	231	326	409
	DRKB	Hydrograph	11.870				11	127	278
	RTDIKB	Routed	11.870				4	57	222
	@CPKB	Combined	13.200		75	160	231	398	404
	SUBGA	Hydrograph	0.140		55	136	188	255	306
	SUBWT1	Hydrograph	0.580		394	630	789	1,008	1,180
	SUBWT2	Hydrograph	0.140		127	203	253	320	372
	DUR	Combined	14.060		395	630	789	1,008	1,180



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**HEC-1 Peak Flow Summary**

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	SUBWD	Hydrograph	0.390	87	170	228	309	371	432
	RTWDXA	Routed	0.390	67	143	198	280	339	399
	SUBXA	Hydrograph	0.250	135	210	258	324	375	425
	CPXA1	Combined	0.640	138	222	283	374	448	525
	DIZZ1	Diversion	0.640						
	DIXAO	Hydrograph	0.640	138	222	283	374	448	525
	RTXAWC	Routed	0.640	97	179	246	347	424	505
	SUBWB	Hydrograph	0.670	261	422	525	665	773	880
	RTWBWC	Routed	0.670	228	385	485	618	722	823
	SUBWC	Hydrograph	0.490	205	326	405	511	593	674
	CPWC	Combined	1.790	373	651	830	1,083	1,299	1,527
	DIQE	Diversion	1.790						
	DIWCWA	Hydrograph	1.790	373	651	830	1,083	1,299	1,527
	RTWCWA	Routed	1.790	133	223	308	407	563	709
	SUBWA	Hydrograph	0.490	279	434	532	666	769	872
	CPWA1	Combined	2.290	282	439	539	674	779	883
	SUBVD	Hydrograph	0.700	271	438	546	693	806	917
	RTVDWA	Routed	0.700	154	289	378	504	600	695
	CPWA2	Combined	2.980	308	490	608	782	924	1,076
	DIQD	Diversion	2.980	23	116	212	355	484	628
	DIWAVC	Hydrograph	2.980	286	374	396	427	440	448
	RTWAVC	Routed	2.980	127	195	239	303	334	359
	SUBVC	Hydrograph	0.490	266	417	516	650	754	857
	CPVC1	Combined	3.470	271	424	525	662	767	872
	SUBVB	Hydrograph	0.720	406	639	788	990	1,145	1,299
	RTVBVC	Routed	0.720	171	316	415	556	666	775
	CPVC2	Combined	4.190	330	560	725	963	1,150	1,340
	DIVA	Diversion	4.190	21	31	32	32	32	32
	DIVCQA	Hydrograph	4.190	309	529	694	931	1,118	1,308
	RTVCQA	Routed	4.190	173	326	439	609	748	888
	SUBQA	Hydrograph	0.490	147	263	336	434	508	581
	CPQA2	Combined	4.680	185	373	532	766	955	1,149
	RSQA	Routed	4.680	184	371	525	753	935	1,119
	DIPF	Diversion	4.680	85	159	221	312	385	456
	DIQAPF	Hydrograph	4.680	99	211	304	441	551	663
	RTQAJH	Routed	4.680	96	206	295	425	532	640
	SUBQE	Hydrograph	0.910	441	669	815	1,016	1,170	1,324
	DRQE	Hydrograph	1.790						
	RTDIQE	Routed	1.790						
	CPQE	Combined	0.910	441	669	815	1,016	1,170	1,324
	RSQE	Routed	0.910	316	539	688	893	1,041	1,198
	RTQEQC	Routed	0.910	277	497	636	829	969	1,107
	SUBQD	Hydrograph	0.250	154	227	274	339	389	439
	DRQD	Hydrograph	2.980	23	116	212	355	484	628
	RTDIQD	Routed	2.980	1	17	52	143	243	353
	CPQD	Combined	0.250	154	227	274	339	389	439
	RSQD	Routed	0.250	127	202	247	306	352	405
	DIQB	Diversion	0.250	19	34	43	55	64	81
	DIQDQB	Hydrograph	0.250	108	168	204	252	288	326
	RTQDQC	Routed	0.250	39	77	104	139	206	288
	SUBQC	Hydrograph	0.610	263	426	528	667	772	878
	CPQC	Combined	1.770	368	742	983	1,311	1,562	1,812
	DISR	Diversion	1.770	295	594	786	1,049	1,249	1,450

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	DIQCR	Hydrograph	1.770	74	148	197	262	312	362
	RTQCJI	Routed	1.770	41	84	118	168	206	246
	SUBQB	Hydrograph	0.500	187	305	379	478	554	629
	DRQB	Hydrograph	0.250	19	34	43	55	64	81
	RTDIQB	Routed	0.250	6	16	23	33	44	69
	CPQB	Combined	0.500	187	305	379	478	554	629
	RSQB	Routed	0.500	27	132	227	342	430	521
	RTQBJH	Routed	0.500	21	103	173	280	360	441
	SUBJH	Hydrograph	0.520	232	393	489	618	715	812
	CPJH	Combined	7.470	230	394	492	729	936	1,147
	RTJHJI	Routed	7.470	132	302	451	703	908	1,118
	SUBJI	Hydrograph	0.310	165	275	341	430	497	563
	CPJI	Combined	7.780	163	304	454	708	916	1,131
	DISR1	Diversion	7.780	163	304	454	708	916	1,131
	SUBPF	Hydrograph	0.500	285	454	565	716	832	947
	RETPF	Diversion	0.500	7	7	8	8	9	10
	RETPF	Hydrograph	0.500	285	454	565	716	832	947
	DRPF	Hydrograph	4.680	85	159	221	312	385	456
	RTDIPF	Routed	4.680	83	157	217	306	378	448
	@CPPF	Combined	5.190	288	460	573	724	840	956
	RSPF	Routed	5.190	64	141	214	306	378	462
	DIPE	Diversion	5.190						
	DIPFPE	Hydrograph	5.190	64	141	214	306	378	462
	RTPFJF	Routed	5.190	64	138	210	301	374	447
	SUBUD	Hydrograph	0.760	210	375	483	629	741	851
	DIUA	Diversion	0.760	52	92	118	153	180	206
	DIUDUA	Hydrograph	0.760	158	283	365	476	561	645
	RTUDVA	Routed	0.760	81	175	243	336	409	483
	SUBVA	Hydrograph	0.490	280	430	528	663	766	869
	DRVVA	Hydrograph	4.190	21	31	32	32	32	32
	RTDIVA	Routed	4.190	4	9	11	17	20	23
	CPVA1	Combined	0.490	280	430	528	663	766	869
	CPVA2	Combined	1.250	283	437	538	678	787	898
	DIUC	Diversion	1.250	282	425	502	590	647	685
	DIVAPE	Hydrograph	1.250	1	11	37	88	140	213
	SUBPE	Hydrograph	0.500	266	439	551	705	824	944
	DRPE	Hydrograph	5.190						
	RTDIPE	Routed	5.190						
	CPPE	Combined	1.760	267	447	578	779	947	1,134
	RSPPE	Routed	1.760	8	130	317	554	783	1,035
	DIPD	Diversion	1.760						1
	DIPEPD	Hydrograph	1.760	8	130	317	554	782	1,033
	RTPEJF	Routed	1.760	7	46	110	238	362	501
	SUBJF	Hydrograph	0.500	349	540	664	835	967	1,097
	CPJF	Combined	7.450	338	525	646	813	942	1,072
	RTJFJG	Routed	7.450	69	143	235	367	524	719
	SUBJG	Hydrograph	0.900	483	759	938	1,183	1,371	1,558
	CPJG	Combined	8.350	479	754	935	1,183	1,373	1,563
	CPJGSR	Combined	16.120	466	736	914	1,156	1,343	1,529
	DISR2	Diversion	16.120	466	736	914	1,156	1,343	1,529
	DRUC	Hydrograph	1.250	282	425	502	590	647	685
	RTVAUC	Routed	1.250	86	172	238	325	383	444
	SUBUC	Hydrograph	0.480	192	321	403	514	598	682

## Flood Control District of Maricopa County

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**HEC-1 Peak Flow Summary**

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>									
	@CPUC1	Combined	1.730	196	327	411	524	610	695
	SUBUA	Hydrograph	0.560	177	304	386	498	583	666
	DRUA	Hydrograph	0.760	52	92	118	153	180	206
	RTDIUA	Routed	0.760	14	28	39	55	70	83
	@CPUA	Combined	1.320	177	304	386	498	583	666
	DITB	Diversion	1.320	35	60	77	99	116	133
	DIUAUC	Hydrograph	1.320	140	241	307	396	464	531
	RTUAUC	Routed	1.320	68	143	196	271	332	389
	CPUC2	Combined	3.050	202	341	430	557	658	765
	DIUB	Diversion	3.050	202	341	421	507	576	650
	DIUCPC	Hydrograph	3.050			10	49	81	115
	RTUCPC	Routed	3.050				7	23	46
	SUBPC	Hydrograph	0.300	218	339	417	522	603	684
	CPPC	Combined	3.350	212	331	407	510	589	668
	RSPC	Routed	3.350	5	5	5	5	13	44
	RTPCNB	Routed	3.350	5	5	5	5	11	34
	SUBNB	Hydrograph	0.440	195	314	392	499	582	664
	CPNB1	Combined	3.790	195	312	388	494	574	655
	DINA	Diversion	3.790	127	201	251	318	369	421
	DINBNA	Hydrograph	3.790	68	110	138	176	205	234
	RTNBJD	Routed	3.790	21	36	46	63	76	90
	SUBPD	Hydrograph	0.440	240	398	502	643	750	856
	DRPD	Hydrograph	1.760						1
	CPPD2	Combined	0.440	240	398	502	643	750	857
	RSPD	Routed	0.440			1	3	8	33
	RTPDNC	Routed	0.440			1	3	8	30
	SUBNC	Hydrograph	0.310	112	212	281	373	447	520
	CPNC	Combined	0.750	111	209	278	369	442	515
	RTNCJE	Routed	0.750	58	117	168	236	293	351
	SUBJE1	Hydrograph	0.250	144	244	308	395	461	528
	CPJE1	Combined	1.000	147	249	313	401	469	538
	RTJEJD	Routed	1.000	105	192	247	330	392	459
	SUBJD	Hydrograph	0.500	151	268	345	448	528	607
	CPJD	Combined	5.300	253	440	566	746	880	1,014
	DIJC	Diversion	5.300	93	160	206	271	319	367
	DIJDJC	Hydrograph	5.300	160	280	360	475	561	647
	RTJDFC	Routed	5.300	81	153	213	297	366	435
	SUBJE2	Hydrograph	0.250	181	275	335	417	481	544
	RETJE	Diversion	0.250	109	84	58	23	20	15
	RETJE2	Hydrograph	0.250	181	275	335	417	481	544
	RTJEFC	Routed	0.250	71	165	227	301	369	427
	SUBFC	Hydrograph	0.360	202	322	399	505	586	666
	CPFC	Combined	5.910	212	362	493	707	866	1,030
	CPFCSR	Combined	22.030	202	343	462	669	821	979
	DISR3	Diversion	22.030	202	343	462	669	821	979
	DISRX	Hydrograph	22.030						
	DRUCUB	Hydrograph	3.050	202	341	421	507	576	650
	RTUCUB	Routed	3.050	192	329	412	500	569	641
	SUBUB	Hydrograph	0.130	48	86	110	143	168	193
	@CPUB	Combined	2.420	213	371	468	576	661	746
	DIUE	Diversion	2.420						
	DIUBSF	Hydrograph	2.420	213	371	468	576	661	746
	RTUBSF	Routed	2.420	189	347	447	557	641	726

## Flood Control District of Maricopa County

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**HEC-1 Peak Flow Summary**

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	SUBTB	Hydrograph	0.890	201	354	457	596	704	811
	DRTB	Hydrograph	1.320	35	60	77	99	116	133
	RTDITB	Routed	1.320	21	40	54	72	86	103
	CPTB	Combined	0.890	202	356	459	600	710	822
	DITA	Diversion	0.890	50	87	112	146	172	199
	DITBTA	Hydrograph	0.890	151	269	347	454	538	623
	RTTBSF	Routed	0.890	93	189	258	355	433	512
	SUBSF	Hydrograph	0.380	36	92	134	190	231	272
	CPSF	Combined	3.680	287	570	768	1,019	1,211	1,412
	RSSF	Routed	3.680	240	522	715	968	1,156	1,351
	DIRJ1	Diversion	3.680	72	157	215	290	347	405
	DISFRJ	Hydrograph	3.680	168	365	501	677	809	945
	RTSFSH	Routed	3.680	162	355	491	668	800	936
	SUBSH	Hydrograph	0.100	68	108	133	168	194	220
	CPSH	Combined	3.790	164	358	495	673	806	945
	RSSH	Routed	3.790	72	186	352	598	761	913
	DIRJ2	Diversion	3.790	46	129	270	483	626	758
	DISHRJ	Hydrograph	3.790	26	57	82	115	136	155
	RTSHSG	Routed	3.790	26	55	77	107	127	147
	SUBTA	Hydrograph	0.240	14	51	75	112	140	168
	DRTA	Hydrograph	0.890	50	87	112	146	172	199
	RTDITA	Routed	0.890	40	74	98	133	158	184
	@CPTA	Combined	1.130	44	100	143	208	255	306
	RTTASG	Routed	1.130	41	96	134	198	247	297
	SUBSG	Hydrograph	0.140	50	84	106	136	160	183
	CPSG	Combined	5.050	50	99	140	211	266	321
	RSSG	Routed	5.050	28	75	133	210	264	320
	DIRJ4	Diversion	5.050	14	44	85	147	191	236
	DISGRJ	Hydrograph	5.050	15	31	48	63	74	85
	RTSGSE	Routed	5.050	15	30	45	61	72	83
	SUBSC	Hydrograph	0.450	10	55	89	132	172	212
	DISD	Diversion	0.450	6	30	48	72	93	115
	DISCSD	Hydrograph	0.450	5	25	41	61	79	98
	RTSCSE	Routed	0.450	3	18	31	48	63	80
	SUBSE	Hydrograph	0.130	77	135	172	221	259	297
	CPSE	Combined	5.630	73	130	166	214	251	289
	RSSE	Routed	5.630	3	26	52	90	135	168
	DIRJ5	Diversion	5.630	3	26	52	90	135	168
	DISERJ	Hydrograph	5.630						
	RTSERI	Routed	5.630						
	SUBRJ	Hydrograph	0.160	33	61	82	110	131	152
	CPRJ1	Hydrograph	3.680	72	157	215	290	347	405
	RTSFRJ	Routed	3.680	62	138	195	274	332	391
	CPRJ2	Hydrograph	3.790	46	129	270	483	626	758
	RTSHRJ	Routed	3.790	46	123	257	468	613	747
	@CPRJ3	Combined	3.950	77	214	422	729	942	1,131
	RTRJ3	Routed	3.950	77	208	398	691	903	1,097
	CPRJ4A	Hydrograph	5.050	14	44	85	147	191	236
	CPRJ4B	Combined	3.950	90	251	468	813	1,063	1,299
	RTSGRJ	Routed	3.950	90	249	460	796	1,043	1,280
	CPRJ5	Hydrograph	5.630	3	26	52	90	135	168
	RTSERJ	Routed	5.630	3	26	48	82	124	164
	@CPRJ6	Combined	4.590	93	253	469	881	1,154	1,416

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	RSRJ	Routed	4.590	93	237	415	750	1,013	1,270
	DIPA2	Diversion	4.590		2	5	95	202	323
	DIRJPA	Hydrograph	4.590	93	235	410	655	810	947
	RTRJRI	Routed	4.590	92	233	409	649	805	942
	DIOE3	Diversion	4.590		24	58	134	184	227
	DIRIOE	Hydrograph	4.590	92	209	351	515	621	715
	RTRIRI	Routed	4.590	92	208	350	514	620	713
	SUBUE	Hydrograph	0.060	27	49	63	81	94	107
	DRUE	Hydrograph	2.420						
	CPUE	Combined	0.060	27	49	63	81	94	107
	RSUE	Routed	0.060						1
	RTUEPB	Routed	0.060						1
	SUBPB	Hydrograph	0.440	113	206	268	350	413	476
	CPPB1	Combined	0.500	112	205	267	349	413	475
	DIPA1	Diversion	0.500	21	39	50	65	76	88
	DIPBPA	Hydrograph	0.500	91	166	217	285	336	388
	RTPBNA	Routed	0.500	33	69	98	139	181	221
	SUBNA	Hydrograph	0.980	75	184	265	378	465	551
	CPNA1	Hydrograph	3.790	127	201	251	318	369	421
	RTDINA	Routed	3.790	34	59	77	108	135	163
	@CPNA	Combined	2.160	84	207	307	467	614	772
	RTNAJC	Routed	2.160	72	177	268	410	534	666
	SUBJC	Hydrograph	0.990	83	195	276	393	481	570
	RETJC	Diversion	0.990	80	122	124	118	118	108
	RETJC	Hydrograph	0.990	82	195	276	393	481	570
	DRJC	Hydrograph	5.300	93	160	206	271	319	367
	RTDIJC	Routed	5.300	35	65	89	124	161	196
	@CPJC	Combined	3.150	107	264	401	623	816	1,021
	DIJB	Diversion	3.150	49	122	184	287	375	470
	DIJCJB	Hydrograph	3.150	58	143	216	337	440	552
	RTJCFB	Routed	3.150	53	129	201	312	408	513
	SUBFB	Hydrograph	0.660	65	170	242	350	433	515
	CPF2	Combined	3.810	65	170	242	348	433	523
	DISRX	Diversion	3.810	65	170	242	348	433	523
	DIFBSR	Hydrograph	3.810						
	SUBPA	Hydrograph	0.480	91	173	231	313	374	435
	DRPA	Hydrograph	0.500	21	39	50	65	76	88
	RTDIPA	Routed	0.500	5	10	15	21	26	31
	DRPA2	Hydrograph	4.590		2	5	95	202	323
	RTRJPA	Routed	4.590		1	3	52	139	257
	@CPPA	Combined	5.070	91	173	231	313	374	435
	DIOE	Diversion	5.070	16	30	40	55	66	76
	DIPAOE	Hydrograph	5.070	71	137	184	250	299	348
	RTPAMH	Routed	5.070	33	72	107	160	202	243
	SUBMH	Hydrograph	0.240	32	86	124	175	211	248
	CPMH	Combined	5.310	34	85	124	181	236	292
	RTMHMD	Routed	5.310	27	65	101	160	210	263
	SUBMD	Hydrograph	0.250	79	129	161	205	240	274
	RETMED	Diversion	0.250	79	129	161	205	240	274
	RETMED	Hydrograph	0.250			1	52	141	218
	CPMD	Combined	9.370	27	65	101	172	233	294
	DIJB1	Diversion	9.370	5	13	21	36	49	61
	DIMDJB	Hydrograph	9.370	21	50	78	136	184	234

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	DIMFX	Diversion	9.370	21	50	78	136	184	234
	DIMDMF	Hydrograph	9.370						
	SUBMI	Hydrograph	0.410	104	204	273	365	435	503
	RETRMI	Diversion	0.410	104	204	273	334	394	362
	RETRMI	Hydrograph	0.410		50	215	343	435	503
	SUBMG	Hydrograph	0.080	38	67	86	111	131	150
	RETRMG	Diversion	0.080	38	67	86	111	131	150
	RETRMG	Hydrograph	0.080			1	37	89	118
	CPMG	Combined	0.490		50	215	377	505	616
	RTMGJB	Routed	0.490		9	38	102	166	233
	SUBJB	Hydrograph	0.990	2	87	152	237	315	393
	CPJB	Combined	1.480	2	85	151	235	313	390
	DRJB	Hydrograph	3.150	49	122	184	287	375	470
	RTDIJB	Routed	3.150	44	110	169	262	344	431
	CPJB2	Hydrograph	9.370	5	13	21	36	49	61
	RDIJB1	Routed	9.370	4	10	15	26	36	47
	@CPJB	Combined	4.140	46	115	209	350	477	616
	DIEE	Diversion	4.140	17	41	75	126	172	222
	DIJBE	Hydrograph	4.140	30	74	134	224	306	394
	RTJBFA	Routed	4.140	26	65	116	200	277	361
	SUBFA	Hydrograph	0.760	96	177	232	309	369	428
	CPFA	Combined	4.900	95	173	227	303	362	420
	DISRX2	Diversion	4.900	95	173	227	303	362	420
	DIFASR	Hydrograph	4.900						
	@CPRI1	Combined	5.160	92	208	350	514	620	713
	SUBRI	Hydrograph	0.230	67	128	170	226	268	310
	SUBSB	Hydrograph	0.170	24	63	90	124	149	174
	RSSB	Routed	0.170		26	48	75	98	131
	SUBSD	Hydrograph	0.170	12	58	85	125	158	190
	DRSD	Hydrograph	0.450	6	30	48	72	93	115
	@CPSD	Combined	0.790	15	73	119	190	248	310
	RSSD	Routed	0.790	15	73	118	190	248	310
	RTSDRI	Routed	0.790	10	63	113	180	238	305
	CPRI2	Combined	6.180	93	209	354	524	639	741
	RSRI	Routed	6.180	93	209	354	524	639	741
	RTRIRH	Routed	6.180	92	197	335	485	595	696
	SUBSA	Hydrograph	0.420	170	282	352	448	521	594
	DIRF	Diversion	0.420	85	141	176	224	261	297
	DISARF	Hydrograph	0.420	85	141	176	224	261	297
	RTSARH	Routed	0.420	29	57	77	109	138	165
	SUBRH	Hydrograph	0.250	28	74	108	153	186	218
	CPRH	Combined	6.850	92	200	340	494	609	717
	RSRH	Routed	6.850	92	199	340	494	607	714
	DIOE2	Diversion	6.850						
	CPRH2	Hydrograph	6.850	92	199	340	494	607	714
	RRHOG1	Routed	6.850	92	199	339	492	606	713
	DIOD1	Diversion	6.850						
	DIOG1	Hydrograph	6.850	92	199	339	492	606	713
	RRHOG2	Routed	6.850	92	197	336	489	601	708
	SUBRG	Hydrograph	0.110	99	144	173	214	245	276
	RETRG	Diversion	0.110	99	116	87	63	36	23
	RETRG	Hydrograph	0.110	10	133	173	214	245	276
	RTRGRF	Routed	0.110	4	17	28	47	63	81

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	SUBRF	Hydrograph	0.630	116	212	277	365	433	500
	DRRF	Hydrograph	0.420	85	141	176	224	261	297
	RTDIRF	Routed	0.420	17	33	45	65	80	101
	@CPRF	Combined	1.160	116	218	295	403	489	576
	DIRE	Diversion	1.160	23	44	59	81	98	115
	DIRFRE	Hydrograph	1.160	92	175	236	323	392	461
	RTRFOG	Routed	1.160	57	124	180	260	321	387
	SUBOG	Hydrograph	0.490	136	234	296	382	448	513
	CPOG	Combined	8.500	137	287	437	700	923	1,146
	RSOG	Routed	8.500	104	272	413	649	851	1,106
	DIOD2	Diversion	8.500	17	46	91	165	228	320
	DIOGOD	Hydrograph	8.500	87	225	322	484	623	786
	RTOGOF	Routed	8.500	86	222	318	479	615	773
	SUBOF	Hydrograph	0.250	144	221	271	340	393	445
	SUBRE	Hydrograph	0.360	60	111	140	180	211	242
	CPRE	Hydrograph	1.160	23	44	59	81	98	115
	RTDIRE	Routed	1.160	10	22	32	47	59	72
	@CPRE	Combined	1.530	60	111	140	180	212	245
	RTREOF	Routed	1.530	52	104	133	174	205	237
	CPOF	Combined	10.280	144	307	439	646	820	1,022
	RSOF	Routed	10.280	75	188	302	492	717	951
	RTOFOB	Routed	10.280	75	188	298	488	705	927
	SUBOB	Hydrograph	0.440	227	350	430	543	631	718
	SUBRD	Hydrograph	0.380	58	108	137	178	211	245
	DIQB	Diversion	0.380	23	43	55	71	85	98
	DIRDOB	Hydrograph	0.380	35	65	82	107	127	147
	RTRDRDC	Routed	0.380	12	27	37	51	64	79
	SUBRC	Hydrograph	0.680	8	78	122	189	245	303
	CPRC	Combined	1.060	12	77	121	188	244	301
	RTRCRB	Routed	1.060	9	41	70	119	162	217
	SUBRB	Hydrograph	0.550	1	64	112	174	231	288
	CPRB	Combined	1.610	9	61	109	171	227	284
	DIKA3	Diversion	1.610	5	31	55	85	113	142
	DIRBKA	Hydrograph	1.610	4	30	55	85	113	142
	RTRBRA	Routed	1.610	3	18	32	58	83	112
	SUBRA	Hydrograph	0.220		19	40	65	85	109
	CPRA	Combined	1.830	3	18	37	62	83	113
	DIKA4	Diversion	1.830		3	16	38	61	90
	DIRAKA	Hydrograph	1.830	2	15	22	25	25	25
	DIAFX	Diversion	1.830	2	15	22	25	25	25
	DIKAAF	Hydrograph	1.830						
	CPOB2	Hydrograph	0.380	23	43	55	71	85	98
	RTDIOB	Routed	0.380	5	12	16	24	29	36
	@CPOB	Combined	9.570	227	350	430	534	733	964
	RSOB	Routed	9.570	38	177	295	433	552	675
	RTOBLE	Routed	9.570	38	177	294	432	550	674
	SUBLE	Hydrograph	0.250	7	38	66	100	130	162
	CPLE	Combined	9.820	38	177	295	433	551	674
	RSLE	Routed	9.820	38	176	293	432	550	673
	DILD	Diversion	9.820			38	93	149	208
	DILELD	Hydrograph	9.820	38	176	255	339	401	465
	RTLEKD	Routed	9.820	38	175	255	338	400	465
	SUBKD	Hydrograph	0.700	4	48	91	144	190	241

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	CPKD	Combined	10.520	38	176	255	339	400	465
	RSKD	Routed	10.520	37	174	253	337	398	463
	RKDKA1	Routed	10.520	37	173	253	337	398	462
	RSKA1	Routed	10.520	13	73	137	219	290	339
	DILA	Diversion	10.520			33	84	122	
	DIKALA	Hydrograph	10.520	13	73	137	186	205	217
	RKDKA2	Routed	10.520	13	73	137	186	205	217
	SUBKA	Hydrograph	1.350	155	327	434	607	741	873
	RETKA	Diversion	1.350	155	220	194	137	79	43
	RETKA	Hydrograph	1.350	131	327	434	607	741	873
	CPKA3	Hydrograph	1.610	5	31	55	85	113	142
	RTDIKA	Routed	1.610	4	20	34	60	87	118
	CPKA4	Hydrograph	1.830		3	16	38	61	90
	CPKA	Combined	11.870	159	327	434	619	771	921
	DIKB	Diversion	11.870			52	232	383	533
	DIKAKB	Hydrograph	11.870	116	316	380	388	388	388
	SUBEC	Hydrograph	0.040		3	7	11	14	18
	SUBAD	Hydrograph	0.440		40	74	117	155	196
	CPAD	Combined	12.350	116	349	451	505	544	587
	SUBAC	Hydrograph	0.460	6	59	97	146	192	237
	SUBAB	Hydrograph	0.430	31	89	128	185	231	276
	CPSR7	Combined	13.230	141	482	654	810	933	1,063
	SUBOE	Hydrograph	0.470	81	160	210	286	345	405
	RETOE	Diversion	0.470	51	20	12	10	10	10
	RETOE	Hydrograph	0.470	81	160	210	286	345	405
	CPOE1	Hydrograph	5.070	16	30	40	55	66	76
	RTDIOE	Routed	5.070	4	8	12	17	21	32
	CPOE2	Hydrograph	6.850						
	CPOE3	Hydrograph	4.590		24	58	134	184	227
	@CPOE	Combined	5.290	81	160	210	286	345	405
	DIOD	Diversion	5.290	12	27	35	47	56	65
	DIOEOD	Hydrograph	5.290	65	128	169	232	280	329
	RTOEMF	Routed	5.290	18	48	71	106	143	180
	SUBMF	Hydrograph	0.970	54	153	229	333	411	488
	CPMF	Hydrograph	9.370	21	50	78	136	184	234
	RTMDMF	Routed	9.370	16	37	56	95	140	187
	CPMF1	Combined	6.260	54	153	229	333	433	553
	DIEB	Diversion	6.260	23	70	104	153	201	256
	DIMFEB	Hydrograph	6.260	27	78	118	175	232	297
	RTMFMC	Routed	6.260	13	47	79	136	187	243
	SUBOD	Hydrograph	0.510	128	225	288	373	439	504
	RETOD	Diversion	0.510	5	4	5	5	6	6
	RETOD	Hydrograph	0.510	128	225	288	373	439	504
	DROD	Hydrograph	5.290	12	27	35	47	56	65
	RTDIOD	Routed	5.290	2	6	9	18	25	32
	DROD2	Hydrograph	6.850						
	DROD3	Hydrograph	8.500	17	46	91	165	228	320
	@CPOD	Combined	7.570	130	240	313	420	505	589
	DIOC	Diversion	7.570	23	43	56	76	91	106
	DIODOC	Hydrograph	7.570	106	197	257	345	414	483
	RTODMC	Routed	7.570	46	99	146	226	295	371
	SUBMC	Hydrograph	1.000	79	189	272	384	469	555
	@CPMC1	Combined	10.040	74	187	283	453	600	754

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	DIMB	Diversion	10.040	29	73	110	174	230	288
	DIMCMB	Hydrograph	10.040	45	114	174	279	370	465
	RTMCIE	Routed	10.040	37	104	166	266	351	442
	DREB	Hydrograph	6.260	23	70	104	153	201	256
	SUBEB	Hydrograph	0.140	5	31	47	72	92	112
	SUBED	Hydrograph	0.480	1	41	71	110	147	183
	CPEB1	Combined	0.620	5	59	98	150	198	247
	CPEB2	Combined	0.620	28	127	199	297	380	465
	RTEBIE	Routed	0.620	19	85	136	209	272	338
	SUBIE	Hydrograph	0.300	23	64	94	134	165	195
	SUBID	Hydrograph	0.560	9	76	118	181	235	289
	CPIE1	Combined	1.490	30	136	208	310	393	477
	CPIE2	Combined	11.530	51	172	277	436	560	694
	RTIEIB	Routed	11.530	48	158	247	391	524	664
	SUBIB	Hydrograph	0.480	30	89	131	191	236	280
	SUBIC	Hydrograph	0.510	1	41	72	112	149	187
	CPIB1	Combined	12.520	48	158	247	391	527	670
	SUBOC	Hydrograph	0.310	142	221	272	342	395	449
	DROC	Hydrograph	7.570	23	43	56	76	91	106
	RTDIQC	Routed	7.570	8	17	25	39	52	67
	CPOC	Combined	0.310	142	221	272	342	396	450
	RTOCMB	Routed	0.310	48	83	109	146	184	221
	SUBMB	Hydrograph	1.000	68	181	266	382	469	556
	DRMB	Hydrograph	10.040	29	73	110	174	230	288
	RTDIMB	Routed	10.040	21	57	90	147	200	259
	@CPMB	Combined	11.880	90	220	321	473	596	726
	RTMBIB	Routed	11.880	69	187	280	417	530	646
	@CPIB2	Combined	14.350	101	307	472	711	915	1,140
	RTIBIA	Routed	14.350	99	297	446	664	869	1,106
	SUBME	Hydrograph	0.330	6	46	79	119	155	193
	RTMEIA	Routed	0.330	2	19	36	59	82	109
	SUBIA	Hydrograph	0.310	20	77	112	167	210	254
	CPIA	Combined	14.990	101	311	469	695	895	1,131
	RTIAHB	Routed	14.990	97	294	452	672	874	1,099
	SUBHB	Hydrograph	0.340	10	67	107	160	208	256
	CPHB1	Combined	15.330	97	294	452	672	874	1,099
	SUBLD	Hydrograph	0.280	60	127	168	232	281	329
	DRLD	Hydrograph	9.820			38	93	149	208
	RTDILD	Routed	9.820			38	93	148	207
	@CPLD	Combined	10.100	60	127	168	232	281	329
	RTLDMA	Routed	10.100	43	99	135	191	236	283
	SUBMA	Hydrograph	0.250		20	47	79	104	132
	CPMA	Combined	10.350	43	114	176	263	330	404
	RTMAHB	Routed	10.350	18	50	82	132	171	220
	@CPHB2	Combined	15.980	103	309	471	694	890	1,172
	RTHBDA	Routed	15.980	102	306	470	692	889	1,170
	SUBDA	Hydrograph	0.330	33	81	115	164	202	239
	CPDA	Combined	16.310	102	307	472	695	889	1,169
	RTDACC	Routed	16.310	102	305	471	693	888	1,167
	SUBCC	Hydrograph	0.980	60	195	278	411	516	621
	CPCC1	Combined	17.290	102	305	472	693	888	1,165
	SUBEE	Hydrograph	0.960	5	74	123	189	250	311
	CPEE1	Hydrograph	4.140	17	41	75	126	172	222

## Flood Control District of Maricopa County

1084 - Durango ADMP Hydrology

**HEC-1 Peak Flow Summary**

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>	RTDIEE	Routed	4.140	16	41	72	123	168	217
	CPEC	Combined	0.960	17	75	133	219	297	382
	RTEEEA	Routed	0.960	13	40	73	108	191	272
	SUBEA	Hydrograph	1.320	1	97	175	273	364	458
	CPEA	Combined	2.280	13	99	177	272	361	455
	RTEADC	Routed	2.280	13	58	101	182	265	352
	SUBDC	Hydrograph	0.830	9	107	172	265	346	427
	CPDC	Combined	3.110	13	103	169	259	339	419
	RTDCCC	Routed	3.110	12	72	121	194	265	333
	SUBDD	Hydrograph	0.130		21	40	63	83	104
	RTDDCC	Routed	0.130		10	22	38	53	70
	CPCC2	Combined	20.530	102	331	503	817	1,084	1,355
	RTCCCB	Routed	20.530	98	322	497	783	1,004	1,276
	SUBCB	Hydrograph	0.740	58	153	224	317	386	457
	CPCB1	Combined	21.270	98	322	496	782	1,004	1,276
	SUBLB	Hydrograph	0.250		21	45	75	98	125
	RTLBHA	Routed	0.250		12	31	55	75	98
	SUBHA	Hydrograph	0.150	3	25	43	65	85	106
	CPHA	Combined	0.400	3	24	42	64	84	105
	RTHAGD	Routed	0.400	1	9	22	42	57	82
	SUBKC	Hydrograph	0.260		23	51	86	113	143
	RTKCGD	Routed	0.260		6	15	30	42	58
	SUBGD	Hydrograph	0.840	46	159	234	349	435	521
	SUBGC	Hydrograph	0.220	33	87	119	170	208	247
	RTGCGD	Routed	0.220	10	30	44	70	90	116
	CPGD	Combined	1.720	49	173	256	393	503	614
	RTGDCB	Routed	1.720	29	128	203	326	424	524
	CPCB	Combined	22.990	100	330	515	815	1,029	1,295
	RTCBCA	Routed	22.990	99	328	505	789	1,000	1,272
	SUBCA	Hydrograph	0.980	54	151	225	327	402	479
	CPCA1	Combined	23.970	100	350	509	789	999	1,271
	SUBGB	Hydrograph	0.220	27	75	105	149	185	220
	RTGBCA	Routed	0.220	7	20	30	46	61	77
	CPCA	Combined	24.190	101	362	530	789	999	1,271
	RTCABC	Routed	24.190	100	356	520	788	997	1,267
	SUBBC	Hydrograph	0.630	15	65	103	153	198	244
	CPBC	Combined	24.820	100	360	524	788	997	1,267
	SUBBB	Hydrograph	0.250	16	49	72	106	132	157
	RTBBBBA	Routed	0.250	5	21	34	56	74	93
	SUBBA	Hydrograph	0.340	26	61	86	122	150	179
	CPBA	Combined	0.590	25	60	85	121	149	178
	RTBAAA	Routed	0.590	19	52	75	110	136	164
	SUBAA	Hydrograph	0.490	14	45	65	96	120	144
	CPAA	Combined	1.080	31	93	138	203	252	304
	SUBLC	Hydrograph	0.120	51	98	128	168	200	231
	RETL	Diversion	0.120	51	98	128	168	200	231
	RETL	Hydrograph	0.120					1	6
	RTLCLA	Routed	0.120					1	2
	SUBLA	Hydrograph	0.510	44	119	167	234	293	351
	RETLA	Diversion	0.510	44	119	167	234	293	351
	RETLA	Hydrograph	0.510					25	125
	DRDILA	Hydrograph	10.520					33	122
	RTDILA	Routed	10.520					33	122

## Flood Control District of Maricopa County

1084 - Durango ADMP Hydrology

**HEC-1 Peak Flow Summary**

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Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
<b>01</b>									
	@CPLA	Combined	11.430				32	136	423
	RTLAKB	Routed	11.430				30	81	123
	SUBKB	Hydrograph	0.420		18	98	152	226	292
	DRKB	Hydrograph	11.870				52	232	383
	RTDIKB	Routed	11.870				12	153	307
	@CPKB	Combined	13.200		18	98	152	226	329
	SUBGA	Hydrograph	0.140		21	86	125	177	216
	SUBWT1	Hydrograph	0.580		261	449	568	739	870
	SUBWT2	Hydrograph	0.140		81	140	177	228	267
	DUR	Combined	14.060		328	647	856	1,144	1,379
									1,613

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***Appendix H***  
***Hydrologic Calculations***



**Druango ADMP**  
**100-yr, 6-hour (Partial Listing)**

ID Project ID: 1084-6 - Major Basin: 01 - Return Period: 100 Years  
ID FILENAME: DUR-6.DAT  
ID November, 2000  
ID Created for the Durango ADMP from the existing file TOLLESON.DAT for  
ID the Floodplain Delineation of the Tolleson Area FCD Project 95-26 by:  
ID Dan Frank (DCF) with Dibble & Associates, Consulting Engineers (DA)  
ID Refer to the End of this file for a list of changes made to the existing  
ID Tolleson model  
ID Original mapping has been supplemented with additional survey by  
ID Project Engineering Consultants  
ID ABBREVIATIONS:  
ID BFC=Buckeye Feeder Canal  
ID SPRR=Southern Pacific Railroad  
\* \*\*\*\*\*  
\* The following is from the original model provided by FCDMC  
\* \*\*\*\*\*  
ID  
ID TOLLESON-FOWLER WATERSHED RAINFALL-RUNOFF MODEL, March 1999  
ID  
ID DIBBLE & ASSOCIATES, CONSULTING ENGINEERS WITH  
ID JE FULLER/HYDROLOGY & GEOMORPHOLOGY, INC.  
ID  
ID THIS MODEL IS BASED ON MAPPING FLOWN BY KENNEY AERIAL MAPPING, INC. 3/28/1994  
ID NGVD 1929, AND SUBSEQUENT SURVEY BY URBAN ENGINEERS  
ID  
ID THE HEC-1 HYDROLOGIC MODEL IS DEVELOPED FOR PLANNING PURPOSES AND  
ID IS NOT INTENDED TO BE USED FOR DESIGN WITHOUT MODIFICATION. THE  
ID INVESTIGATION AND THE HYDROLOGY IS BASED UPON CRITERIA DESCRIBED  
ID IN THE HYDROLOGY DESIGN MANUAL (HDM).  
ID  
ID THE JD OPTIONS WITHIN HEC-1 WERE USED TO SIMULATE THE AREAL REDUCTION IN  
ID POINT PRECIPITATION VALUES BASED ON THE ACCUMULATED DRAINAGE AREA. EVEN  
ID WITH THIS REFINEMENT, APPLICATION OF THIS MODEL TO OTHER AREAS WITHIN THE  
ID WATERSHED AND FOR OTHER PURPOSES SHOULD INCLUDE ANALYSIS OF OTHER STORMS  
ID DURATIONS AND CENTERINGS SUCH AS THE SIX-HOUR STORM WITH RAINFALL PATTERNS  
ID AS DESCRIBED IN DDM1.  
ID  
ID FLOOD CONTROL DISTRICT OF MARICOPA COUNTY.  
ID HYDROLOGY BRANCH, ENGINEERING DIVISION.  
\* \*\*\*\*\*  
\*DIAGRAM  
IT 5 1200 2000  
IO 5  
IN 15  
JD 3.23 0.01  
PC 0.000 0.008 0.016 0.025 0.033 0.041 0.050 0.058 0.066 0.074  
PC 0.087 0.099 0.118 0.138 0.216 0.377 0.834 0.911 0.931 0.950  
PC 0.962 0.972 0.983 0.991 1.000  
JD 3.209 0.50  
JD 3.149 2.80  
PC 0.000 0.009 0.016 0.025 0.034 0.042 0.051 0.059 0.067 0.076  
PC 0.087 0.100 0.120 0.163 0.252 0.451 0.694 0.837 0.900 0.938  
PC 0.950 0.963 0.975 0.988 1.000  
JD 2.978 16.0  
PC 0.000 0.009 0.020 0.030 0.048 0.063 0.076 0.090 0.105 0.119  
PC 0.135 0.152 0.175 0.222 0.304 0.472 0.670 0.796 0.868 0.912  
PC 0.946 0.960 0.973 0.987 1.000  
JD 2.623 90.0  
PC 0.000 0.021 0.035 0.051 0.071 0.087 0.105 0.125 0.143 0.160  
PC 0.179 0.201 0.232 0.281 0.364 0.500 0.658 0.773 0.841 0.888  
PC 0.927 0.945 0.964 0.982 1.000  
JD 1.841 500.0  
PC 0.000 0.024 0.043 0.059 0.078 0.098 0.119 0.141 0.162 0.186  
PC 0.212 0.239 0.271 0.321 0.408 0.515 0.627 0.735 0.814 0.864  
PC 0.907 0.930 0.954 0.977 1.000  
\*

**NOTE: REMAINDER OF THIS MODEL FOLLOWS THE 100-YR, 24-HOUR MODEL AND IS NOT PRESENTED HERE**



**Druango ADMP  
100-yr, 24-hour**

ID Project ID: 1084 - Major Basin: 01 - Return Period: 100 Years  
ID FILENAME: DUR-24.DAT  
ID May, 2000  
ID Created for the Durango ADMP from the existing file TOLLESON.DAT for  
ID the Floodplain Delineation of the Tolleson Area FCD Project 95-26 by:  
ID Dan Frank (DCF) with Dibble & Associates, Consulting Engineers (DA)  
ID Refer to the End of this file for a list of changes made to the existing  
ID Tolleson model  
ID Original mapping has been supplemented with additional survey by  
ID Project Engineering Consultants  
ID ABBREVIATIONS:  
ID BFC=Buckeye Feeder Canal  
ID SPRR=Southern Pacific Railroad  
\* \*\*\*\*\*  
\* The following is from the original model provided by FCDMC  
\* \*\*\*\*\*  
ID  
ID TOLLESON-FOWLER WATERSHED RAINFALL-RUNOFF MODEL, March 1999  
ID  
ID DIBBLE & ASSOCIATES, CONSULTING ENGINEERS WITH  
ID JE FULLER/HYDROLOGY & GEOMORPHOLOGY, INC.  
ID  
ID THIS MODEL IS BASED ON MAPPING FLOWN BY KENNEY AERIAL MAPPING, INC. 3/28/1994  
ID NGVD 1929, AND SUBSEQUENT SURVEY BY URBAN ENGINEERS  
ID  
ID THE HEC-1 HYDROLOGIC MODEL IS DEVELOPED FOR PLANNING PURPOSES AND  
ID IS NOT INTENDED TO BE USED FOR DESIGN WITHOUT MODIFICATION. THE  
ID INVESTIGATION AND THE HYDROLOGY IS BASED UPON CRITERIA DESCRIBED  
ID IN THE HYDROLOGY DESIGN MANUAL (HDM).  
ID  
ID THE JD OPTIONS WITHIN HEC-1 WERE USED TO SIMULATE THE AREAL REDUCTION IN  
ID POINT PRECIPITATION VALUES BASED ON THE ACCUMULATED DRAINAGE AREA. EVEN  
ID WITH THIS REFINEMENT, APPLICATION OF THIS MODEL TO OTHER AREAS WITHIN THE  
ID WATERSHED AND FOR OTHER PURPOSES SHOULD INCLUDE ANALYSIS OF OTHER STORMS  
ID DURATIONS AND CENTERINGS SUCH AS THE SIX-HOUR STORM WITH RAINFALL PATTERNS  
ID AS DESCRIBED IN DDM1.  
ID  
ID FLOOD CONTROL DISTRICT OF MARICOPA COUNTY.  
ID HYDROLOGY BRANCH, ENGINEERING DIVISION.  
\* \*\*\*\*\*  
\*DIAGRAM  
IT 5 1200 2000  
IO 5  
IN 15  
JD 3.99 0.01  
PC 0.000 0.002 0.005 0.008 0.011 0.014 0.017 0.020 0.023 0.026  
PC 0.029 0.032 0.035 0.038 0.041 0.044 0.048 0.052 0.056 0.060  
PC 0.064 0.068 0.072 0.076 0.080 0.085 0.090 0.095 0.100 0.105  
PC 0.110 0.115 0.120 0.126 0.133 0.140 0.147 0.155 0.163 0.172  
PC 0.181 0.191 0.203 0.218 0.236 0.257 0.283 0.387 0.663 0.707  
PC 0.735 0.758 0.776 0.791 0.804 0.815 0.825 0.834 0.842 0.849  
PC 0.856 0.863 0.869 0.875 0.881 0.887 0.893 0.898 0.903 0.908  
PC 0.913 0.918 0.922 0.926 0.930 0.934 0.938 0.942 0.946 0.950  
PC 0.953 0.956 0.959 0.962 0.965 0.968 0.971 0.974 0.977 0.980  
PC 0.983 0.986 0.989 0.992 0.995 0.998 1.000  
JD 3.751 10.00  
JD 3.591 30.00  
JD 3.431 60.00  
JD 3.376 90.00  
\*  
KK SUBWD BASIN  
KM VALLEY S-GRAFH WAS USED FOR THIS BASIN  
BA 0.393  
LG 0.20 0.19 7.00 0.17 12  
UI 32 42 116 157 189 226 281 403 348 281  
UI 240 193 156 115 65 54 42 32 17 10  
UI 10 10 10 9 0 0 0 0 0 0  
UI 0 0 0 0 0 0 0 0 0 0

**Druango ADMP**  
**100-yr, 24-hour**

UI	0	0	0	0	0	0	0	0	0	0	0	0
*												
KKRTWDXA	ROUTE	REACH										
KM	ROUTE FLOW FROM WD TO XA (ALONG 27TH AVENUE).											
KM	TYPE C CHANNEL											
RS	4	-1	0									
RC	0.025	0.025	0.025	2500	0.0016	0.00						
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0				
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0				
*												
KK SUBXA	BASIN											
KM	VALLEY S-GRAPH WAS USED FOR THIS BASIN											
BA	0.247											
LG	0.13	0.15	9.70	0.06	44							
UI	34	125	193	268	417	308	225	157	74	48		
UI	29	10	11	11	0	0	0	0	0	0		
UI	0	0	0	0	0	0	0	0	0	0		
UI	0	0	0	0	0	0	0	0	0	0		
*												
KK CPXA1												
KM	ADD HYDROGRAPHS AT XA											
HC	2											
*												
* KK RSXA												
* KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.												
* RS	1	STOR	0	0								
* SV	.01	.07	1.0	5.1	14.0	28.5	50.0	79.1	117.4	165		
* SE1063.3	1063.5	1063.6	1064.1	1064.6	1065.1	1065.6	1066.1	1066.6	1067			
* SQ	0	15	43	455	1751	3879	6999	11192	17236	253		
*												
KK DIXAO												
KM	DIVERT FLOW FROM XA SOUTHWARD OVER SPRR AND OUT OF MODEL											
DT	DIZZI											
DI	0	0	43	455	1751	3879	6999	11192	17236	25382		
DQ	0	0	0	0	0	0	0	44	960	3141		
*												
KKRTXAWC	ROUTE	REACH										
KM	ROUTE FLOW FROM XA TO WC (ALONG SPRR).											
KM	TYPE C CHANNEL											
RS	12	-1	0									
RC	0.035	0.035	0.035	5100	0.0016	0.00						
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0				
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0				
*												
KK SUBWB	BASIN											
KM	VALLEY S-GRAPH WAS USED FOR THIS BASIN											
BA	0.667											
LG	0.16	0.15	9.70	0.06	36							
UI	60	103	240	316	391	474	689	701	538	442		
UI	358	278	177	107	94	61	41	19	18	19		
UI	19	18	0	0	0	0	0	0	0	0		
UI	0	0	0	0	0	0	0	0	0	0		
UI	0	0	0	0	0	0	0	0	0	0		
*												
KKRTWBWC	ROUTE	REACH										
KM	ROUTE FLOW FROM WB TO WC (ALONG 35TH AVENUE).											
KM	TYPE C CHANNEL											
RS	3	-1	0									
RC	0.025	0.025	0.025	2500	0.0020	0.00						
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0				
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0				
*												
KK SUBWC	BASIN											
KM	VALLEY S-GRAPH WAS USED FOR THIS BASIN											
BA	0.487											
LG	0.16	0.16	9.70	0.06	43							
UI	46	90	195	255	315	404	581	477	377	302		
UI	240	167	90	78	48	36	14	15	14	14		

**Druango ADMP**  
**100-yr, 24-hour**

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UI	0	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0	0
*											
KK	CPWC										
KM	ADD HYDROGRAPHS AT WC.										
HC	3										
*											
* KK	RSWC										
* KM	MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.										
* KM	Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0										
* KO	1										
* RS	1 STOR 0 0										
* SV	16.1 27.6 44.0 65.2 90.7 121.5 159.6 206.8 263.7 329										
* SE	1057.1 1057.6 1058.1 1058.6 1059.1 1059.6 1060.1 1060.6 1061.1 1061										
* SQ	0 34 456 1381 2859 4933 7982 12958 19919 288										
*											
KKDIWCWA											
KM	DIVERT FLOW FROM WC TO QE										
KM	Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP										
DT	DIQE										
DI	0 34 456 1381 2859 4933 7982 12958 19919 28835										
DQ	0 0 0 0 0 0 141 1221 3463 6954										
*											
* KKDIWCQE											
* KM	DIVERT FLOW FROM WC TO QE										
* DT	DIQE										
* DI	0 115 608 1579 3086 5253 8972 15024 23745 350										
* DQ	0 0 0 0 0 40 951 3350 7104 121										
*											
KKRTWCWA											
KM	HEC-RAS REACH										
KO	1										
KM	ROUTE FLOW FROM WC TO WA (ALONG SPRR).										
KM	Channel geometry changed to match natural conditions 04.11.00 JEP										
KM	Manning's N values changed to match approved values 04.11.00 JEP										
KM	Method changed from Normal Depth Storage to Modified Puls 05.25.00 JEP										
KM	Stage-storage values are based on HEC-2 analysis results 06.19.00 JEP										
KM	Values transferred directly from HEC-2 file: Tape7_1 09.29.00 JEP										
RS	15 STOR 0 0										
SV	0 103 168 242 267 296 317 332 338 354										
SV	375										
SQ	0 200 400 800 1000 1200 1400 1600 1700 1900										
SQ	2200										
* RC	.129 .129 .129 4850 .0010										
* RX	0 40 200 410 870 1240 1700 2160										
* RY	4.4 3.8 0 1.6 0 1.8 2.8 4.4										
*											
*											
KK	SUBWA BASIN										
KM	VALLEY S-GRAPH WAS USED FOR THIS BASIN										
BA	0.492										
LG	0.15 0.15 10.10 0.05 43										
UI	75 302 455 683 855 573 402 209 117 67										
UI	23 23 23 0 0 0 0 0 0 0										
UI	0 0 0 0 0 0 0 0 0 0										
*											
KK	CPWA1										
KM	ADD HYDROGRAPH SUBWA TO RTWCWA										
HC	2										
*											
KK	SUBVD BASIN										
KM	VALLEY S-GRAPH WAS USED FOR THIS BASIN										
BA	0.697										
LG	0.16 0.16 9.70 0.06 36										
UI	63 108 251 330 408 495 720 733 562 461										
UI	375 291 185 112 98 63 44 19 20 19										
UI	20 19 0 0 0 0 0 0 0 0										

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**Druango ADMP  
100-yr, 24-hour**

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UI	0	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0	0
*											
KKRTVDWA ROUTE REACH											
KM ROUTE FLOW FROM VD TO WA (ALONG 43RD AVENUE).											
KM TYPE B CHANNEL											
RS	2	-1	0								
RC	0.100	0.020	0.100	2500	0.0030	0.00					
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0			
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7			
*											
KK CPWA2											
KM ADD HYDROGRAPHS FROM SUBWA AND RTWCWA TO RTVDWA.											
HC	2										
*											
* KK RSWA											
* KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.											
* KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0											
* KO	1										
* RS	1	STOR	0	0							
* SV	1.3	1.9	2.4	3.1	4.0	8.5	16.7	29.9	48.5	74	
* SE1050.7	1050.9	1051.1	1051.3	1051.4	1051.9	1052.4	1052.9	1053.4	1053		
* SQ	0	0	0	0	0	77	562	1532	3131	53	
*											
KKDIWAVC											
KM DIVERT FLOW FROM WA TO QD OVER SPRR											
KM Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP											
KM Revised DQ records based on HEC-2 analysis results. 06.28.00 JEP											
DT	DIQD										
DI	0	200	400	800	1000	1200	1400	1600	1700	1900	
DQ	0	0	42	369	555	746	942	1140	1174	1370	
*											
* KKDIVCQD											
* KM DIVERT FLOW FROM VC TO QD OVER SPRR											
* DT	DIQD										
* DI	0	810	9237	10710							
* DQ	0	0	0	63							
*											
KKRTWAVC											
KM HEC-RAS REACH											
KO	1										
KM MODIFIED PULS ROUTE FLOW FROM WA TO VC (ALONG SPRR).											
* KM	Channel geometry changed to match natural conditions 04.11.00 JEP										
KM	Manning's N values changed to match approved values 04.11.00 JEP										
KM	Method changed from Normal Depth Storage to Modified Puls 05.22.00 JEP										
KM	Stage-Storage values based on HEC-2 analysis results. 06.19.00 JEP										
KM	Values transferred directly from HEC-2 file: Tape7_2 9.29.00 JEP										
RS	15	STOR	0	0							
SV	0	146	178	193	201	208	212				
SQ	0	400	600	800	989	1247	1487				
* RC	.317	.317	.317	5270	.0005						
* RX	0	50	120	390	810	950	1400	1700			
* RY	6.8	0	0	1.8	2.8	3.8	5.1	6.8			
*											
KK SUBVC BASIN											
KM VALLEY S-GRAPH WAS USED FOR THIS BASIN											
BA	0.490										
LG	0.12	0.16	8.40	0.10	50						
UI	75	300	454	680	852	570	400	209	116	67	
UI	23	23	23	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
*											
KK CPVC1											
KM ADD HYDROGRAPH SUBVC TO RTWAVC.											
HC	2										
*											
KK SUBVB BASIN											

---

**Druango ADMP**  
**100-yr, 24-hour**

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KM	VALLEY	S-GRAPH	WAS	USED	FOR	THIS	BASIN
----	--------	---------	-----	------	-----	------	-------

BA 0.720

LG	0.15	0.17	9.70	0.06	45		
UI	121	489	718	1162	1201	810	529
UI	36	36	0	0	0	0	0
UI	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0

\*

KKRTVBVC ROUTE REACH

KM ROUTE FLOW FROM VB TO VC (ALONG 51ST AVENUE).

KM TYPE B CHANNEL

RS	2	-1	0			
RC	0.100	0.020	0.100	2500	0.0017	0.00
RX	0.0	470.0	476.0	480.0	520.0	524.0
RY	4.7	0.0	0.0	1.0	1.0	0.0

\*

\*

KK CPVC2

KM ADD HYDROGRAPHS FROM SUBVC AND RTWAVC TO RTVBVC.

HC	2
----	---

\*

\* KK RSVC

\* KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.

\* KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0

\* KO 1

RS	1	STOR	0	0						
SV	70	83	97	113	121	170	192	216	284	3
SE	1051.4	1051.6	1051.8	1052.0	1052.1	1052.6	1052.8	1053.0	1053.3	1053
SQ	16	246	746	1537	2048	5354	7033	8943	12315	147

\*

KKDIVCQA

KM DIVERT FLOW FROM VC TO VA OVER 51st AVE.

KM Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP

KM Revised DQ records based on HEC-2 analysis results. 06.19.00 JEP

DT	DIVA							
DI	0	100	400	600	800	989	1247	1487
DQ	0	1	27	32	30	32	32	32

\*

\* KKDIVCVA

\* KM DIVERT FLOW FROM VC TO VA OVER 51st AVE.

DT	DIVA				
DI	0	9	654	2822	7159
DQ	0	4	214	753	1814

\*

KKRTVCQA ROUTE REACH

KM ROUTE FLOW FROM VC TO QA (ALONG 51ST AVENUE).

KM TYPE B CHANNEL

RS	4	-1	0			
RC	0.100	0.020	0.100	5000	0.0030	0.00
RX	0.0	470.0	476.0	480.0	520.0	524.0
RY	4.7	0.0	0.0	1.0	1.0	0.0

\*

KK SUBQA BASIN

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA 0.485

LG	0.34	0.14	10.10	0.05	20		
UI	38	40	133	178	215	253	303
UI	306	252	209	170	115	67	63
UI	12	11	12	11	12	0	0
UI	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0

\*

KK CPQA2

KM ADD HYDROGRAPHS AT QA

HC	2
----	---

**Druango ADMP**  
**100-yr, 24-hour**

---

\*

KK RSQA

KM MODIFIED PLUS ROUTING THROUGH PONDING BEHIND RID

RS	1	STOR	-1	0						
SV	6.6	9.4	13.0	17.4	22.4	28.1	34.6	42.1	50.4	
SE	1032.2	1032.4	1032.6	1032.8	1033.0	1033.2	1033.4	1033.6	1033.8	
SQ	0	69	1129	6033	11213					
SE	1031.9	1032.4	1032.9	1033.4	1033.9					

\*

KKDIQAPF

KM DIVERT FLOW FROM QA TO PF

DT DIPF

DI	0	69	1129	6033	11213					
DQ	0	39	462	1272	2210					

\*

KKRTQAJH ROUTE REACH

KM ROUTE FLOW FROM QA TO JH (SHEET FLOW).

KM TYPE A CHANNEL

RS	11	-1	0							
RC	0.100	0.100	0.100	2800	0.0031	0.00				
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0		
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0		

\*

KK SUBQE BASIN

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA 0.913

LG	0.15	0.13	10.10	0.04	56					
UI	92	200	409	529	670	915	1121	854	673	525
UI	394	212	156	109	77	28	29	28	29	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KK DRQE

KM RETURN DIVERT FROM WC

DR DIQE

\*

KKRTDIQE ROUTE REACH

KM ROUTE DIVERT FROM WC TO QE

KM TYPE A CHANNEL

RS	8	-1	0							
RC	0.025	0.025	0.025	6600	0.0030	0.00				
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0		
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0		

\*

KK CPQE

KM ADD HYDROGRAPHS AT QE.

HC 2

\*

KK RSQE

KM MODIFIED PULS ROUTING BEHIND RID CANAL

RS	1	STOR	0	0						
SV	9.5	11.0	14.9	20.2	26.5	33.8	55.23	82.5	95.6	159.9
SE	1040.1	1040.2	1040.4	1040.6	1040.8	1041.0	1041.5	1042.0	1042.2	1043.0
SQ	0	1.8	62.8	242.3	581.9	1158	4169	9977	13108	31180

\*

KKRTQEQC ROUTE REACH

KM ROUTE FLOW FROM QE TO QC (SHEET FLOW).

KM TYPE A CHANNEL

RS	3	-1	0							
RC	0.025	0.025	0.025	3000	0.0027	0.00				
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0		
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0		

\*

KK SUBQD BASIN

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA 0.249

LG	0.17	0.06	12.40	0.02	51					
----	------	------	-------	------	----	--	--	--	--	--

**Druango ADMP**  
**100-yr, 24-hour**

UI	35	125	195	271	419	311	227	158	75	48
UI	29	10	11	11	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	DRQD									
KM	RETURN	DIVERT	FROM	WA						
DR	DIQD									
*										
KK	RRTDIQD	ROUTE	REACH							
KM	ROUTE	DIVERT	FROM	WA	TO	QD				
KM	TYPE	C	CHANNEL							
RS	5		-1	0						
RC	0.100	0.020	0.100	5000	0.0030	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										
KK	CPQD									
KM	ADD	HYDROGRAPHS	AT	QD						
HC	2									
*										
KK	RSQD									
KM	MODIFIED	PULS	ROUTING	BEHIND	RID	CANAL.				
RS	1	STOR	0	0						
SV	2.8	4.8	8.6	14.6	22.5	31.9	42.6	54.8	65.5	
SE1038.1	1038.5	1039.0	1039.5	1040.0	1040.5	1041.0	1041.5	1042.0		
SQ	0	30.5	388.4	1580.9	4070.0	7936.6	13214.2	19810.4	26117.2	
*										
KK	KKDIQDQB									
KM	DIVERT	FLOW	FROM	QD	TO	QB				
DT	DIQB									
DI	0	31	388	1580	4070	7937	13214	19810	26117	
DQ	0	0	71	591	1899	3883	6624	10067	13292	
*										
KK	KKRTQDQC	ROUTE	REACH							
KM	ROUTE	FLOW	FROM	QD	TO	QC.				
KM	TYPE	B	CHANNEL							
RS	2		-1	0						
RC	0.100	0.020	0.100	2600	0.0040	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										
KK	SUBQC	BASIN								
KM	VALLEY	S-GRAFH	WAS USED	FOR THIS	BASIN					
BA	0.606									
LG	0.23	0.16	10.10	0.04	32					
UI	63	146	285	371	474	679	733	552	429	333
UI	233	119	98	64	33	20	20	19	20	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	CPQC									
KM	ADD	HYDROGRAPHS	AT	QC						
HC	3									
*										
KK	DIQCRC									
KM	DIVERT	80%	OF FLOW	FROM	QC	TO RIVER				
DT	DISR									
DI	0	25	50	75	100	150	200			
DQ	0	20	40	60	80	120	160			
*										
KK	KKRTQCJII	ROUTE	REACH							
KM	ROUTE	FLOW	FROM	QC	TO	JF				
KM	TYPE	A	CHANNEL							
RS	15		-1	0						
RC	0.100	0.100	0.100	6500	0.0028	0.00				
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0		
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0		

**Druango ADMP**  
**100-yr, 24-hour**

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\*

KK SUBQB BASIN

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA 0.505

LG	0.30	0.11	11.20	0.03	27					
UI	40	48	143	194	234	276	336	483	465	366
UI	316	253	211	166	97	69	63	41	34	12
UI	13	12	13	12	13	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KK DRQB

KM RETURN DIVERT FROM QD

DR DIQB

\*

KKRTDIQB ROUTE REACH

KM TYPE C CHANNEL

RS	12		-1	0						
RC	0.100	0.100	0.100	2500	0.0028	0.00				
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0		
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0		

\*

KK CPQB

KM ADD HYDROGRAPHS AT QB

HC 2

\*

KK RSQB

KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND RID.

KM THROUGH THE 43RD AVENUE.

RS	1	STOR	0	0						
SV	9.4	13.9	19.2	25.5	33.1	41.8	51.7	62.9	75.3	89.1
SE	1033.3	1033.6	1033.9	1034.2	1034.5	1034.8	1035.1	1035.4	1035.7	1036.0
SQ	0	19.3	123.0	423.5	958.2	1718.8	2775.9	4426.7	6845.4	9954.3

\*

KKRTQBJH ROUTE REACH

KM ROUTE FLOW FROM QB TO JH (SHEET FLOW).

KM TYPE A CHANNEL

RS	15		-1	0						
RC	0.100	0.100	0.100	3500	0.0028	0.00				
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0		
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0		

\*

KK SUBJH BASIN

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA 0.516

LG	0.37	0.11	11.20	0.03	17					
UI	62	175	314	402	581	733	541	418	304	176
UI	107	71	41	19	19	19	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KK CPJH

HC 4

\*

KKRTJHJI ROUTE REACH

KM ROUTE FLOW FROM JH TO JI (SHEET FLOW).

KM TYPE A CHANNEL

RS	14		-1	0						
RC	0.100	0.100	0.100	4000	0.0031	0.00				
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0		
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0		

\*

KK SUBJI BASIN

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA 0.308

LG	0.39	0.11	11.20	0.03	21					
UI	52	209	307	497	514	346	227	104	62	28
UI	16	15	0	0	0	0	0	0	0	0

**Druango ADMP**  
**100-yr, 24-hour**

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UI	0	0	0	0	0	0	0	0	0	0	0
*											
KK CPJI											
KM COMBINE FLOWS AT JI											
HC 2											
*											
KK DISRX											
KM DUMMY DIVERT TO SALT RIVER (NOT RETURNED)											
DT DISR1											
DI 0 10000											
DQ 0 10000											
*											
KK SUBPF BASIN											
KM VALLEY S-GRAPH WAS USED FOR THIS BASIN											
BA 0.502											
LG 0.17 0.20 7.30 0.12 52											
UI 113 407 611 1001 766 497 244 127 58 26											
UI 28 0 0 0 0 0 0 0 0 0											
UI 0 0 0 0 0 0 0 0 0 0											
UI 0 0 0 0 0 0 0 0 0 0											
*											
KK RETPF											
KM DIVERT RETENTION OUT OF MODEL DUE TO KNIGHT TRANSPORTATION											
KM PARKING LOT EXPANSION. -DCF											
KM TOTAL RETENTION IS 3.9 AF. 80% OF THAT IS USED HERE. -DCF											
DT RETPF 3.1											
DI 0 10000											
DQ 0 10000											
*											
KK DRPF											
KM RETURN DIVERT FROM QA.											
DR DIPF											
*											
KKRTDIPF ROUTE REACH											
KM ROUTE DIVERT FROM QA TO PF.											
KM TYPE C CHANNEL											
RS 11 -1 0											
RC 0.035 0.035 0.035 2600 0.0005 0.00											
RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0											
RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0											
*											
KK @CPPF											
KM ADD HYDROGRAPHS AT PF											
HC 2 5.19											
*											
KK RSPF											
KM MODIFIED PULS ROUTING BEHIND RID											
* KO 1											
RS 1 STOR 0 0											
SV 28.2 33.4 39.2 48.8 55.7 67.3 76.0 85.3 100.7 111.8											
SE1032.2 1032.4 1032.6 1032.8 1033.0 1033.2 1033.4 1033.6 1033.8 1034.0											
SQ 0 19.4 124.9 457.5 1050.9 1875.2 2964.8 4437.1 6362.7 8725.9											
*											
KKDIPFPE											
KM DIVERT FLOW FROM PF TO PE											
DT DIPE											
DI 0 255 1875 5340 11513											
DQ 0 0 0 160 1143											
*											
KKRTPFJF ROUTE REACH											
KM ROUTE FLOW FROM PF TO JF.											
KM TYPE A CHANNEL											
RS 6 -1 0											
RC 0.035 0.035 0.035 4000 0.0040 0.00											
RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0											
RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0											
*											
KK SUBUD BASIN											

**Druango ADMP**  
**100-yr, 24-hour**

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KM	VALLEY	S-GRAPH	WAS	USED	FOR	THIS	BASIN
----	--------	---------	-----	------	-----	------	-------

BA 0.759

LG	0.31	0.16	9.70	0.07	26		
UI	56	56	174	246	299	345	411
UI	504	426	355	302	243	170	99
UI	38	17	18	17	17	17	0
UI	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0

\*

KKDIUDUA

KM DIVERT 25% OF FLOW FROM UD TO UA.

DT DIUA

DI	0	25	50	75	100	150	200
DQ	0	6	13	19	25	38	50

\*

KKRTUDVA ROUTE REACH

KM ROUTE FLOW FROM UD TO VA (ALONG 59TH AVENUE).

KM TYPE B CHANNEL

RS	3	-1	0				
RC	0.100	0.020	0.100	2600	0.0019	0.00	
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0

\*

KK SUBVA BASIN

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA 0.493

LG	0.10	0.15	8.40	0.10	58		
UI	75	303	456	684	857	574	402
UI	23	23	24	0	0	0	0
UI	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0

\*

KK DRVA

KM RETURN DIVERT FROM VC

DR DIVA

\*

\* KKRTDIVA ROUTE REACH

\* KM ROUTE DIVERT TO VA (ALONG SPRR)

\* KM Channel geometry changed to match natural conditions 04.11.00JEP

\* KM Manning's N values changed to match approved values 04.11.00 JEP

\* KO 1

\* RS 9 -1 0

\* RC 0.035 0.035 0.035 5200 0.0015 0.00

\* RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0

\* RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0

\*

KKRTDIVA

KM HEC-RAS REACH

KO 1

KM ROUTE FLOW FROM VC TO VA (ALONG SPRR).

KM Method changed from Normal Depth Storage to Modified Puls 06.19.00 JEP

KM Stage-Storage values are based on HEC-2 analysis results. 06.19.00 JEP

KM Values transferred directly from HEC-2 file: Tape7\_3 09.29.00 JEP

RS	15	FLOW	0	0			
SV	0	56	87	130	163	191	205
SQ	0	100	200	400	600	800	1000
							1200
							1500

\*

KK CPVA1

KM ADD HYDROGRAPH SUBVA TO RTDIVA

HC 2

\*

KK CPVA2

KM ADD HYDROGRAPHS SUBVA AND RTDIVA TO RTUDVA

HC 2

\*

\* KK RSVA

\* KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.

**Druango ADMP**  
**100-yr, 24-hour**

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\* KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0  
\* KO 1  
\* RS 1 STOR 0 0  
\* SV 10.3 13.3 15.6 23.9 34.6 48.9 67.7 90.8 118.6  
\* SE1044.2 1044.3 1044.5 1045.0 1045.5 1046.0 1046.5 1047.0 1047.5  
\* SQ 0 2 39 397 1279 2904 5363 8613 13175  
\*

**KKDIVAPE**

KM DIVERT FLOW FROM VA TO UC OVER 59TH AVE.

KM Revised DQ records to reflect new weir analysis based on survey. 05.04.00 JEP

KM REVISED DIVERSION RECORDS TO REROUTE DIVERSION AROUND CODE SEQUENCE.

KM INSTEAD OF DIVERTING FLOW OVER THE WEIR TO THE SOUTH, FLOW IS BEING

KM DIVERTED TO THE WEST. 06.02.00 -DCF

KM Revised DQ records based on HEC-2 analysis results. 06.19.00 JEP

DT DIUC

DI 0 200 400 600 800 1000 1200 1500

DQ 0 200 398 548 656 715 738 756

\* DI 0 2 39 397 1279

\* DQ 0 0 0 0 0 0

\*

**KK SUBPE BASIN**

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA 0.504

LG 0.13 0.26 6.20 0.22 56

UI 130 449 692 1071 728 453 189 108 32 29

UI 0 0 0 0 0 0 0 0 0 0

UI 0 0 0 0 0 0 0 0 0 0

UI 0 0 0 0 0 0 0 0 0 0

\*

**KK DRPE**

KM RETURN DIVERT FROM PF

DR DIPE

\*

**KKRTDIPE**

KM ROUTE DIVERT FROM PF TO PE.

KM TYPE C CHANNEL

RS 3 -1 0

RC .035 .035 .035 2000 .0005

RX 0 20 35 50 50.1 250 450 550

RY 5 5 2.5 0 0 2 4 5

\*

**KK CPPE**

KM ADD HYDROGRAPHS AT PE

HC 3

\*

**KK RSPE**

KM RESERVOIR ROUTING BEHIND 59TH AVE AND RID CANAL

RS 1 STOR 0 0

SV 15.6 16.9 21.0 24.0 29.5 33.7 38.3 43.2

SE1032.5 1032.6 1032.8 1033.0 1033.2 1033.4 1033.6 1033.7

SQ 0 1.44 23 194 637 1420 2516 3177

\*

**KKDIPEPD**

KM DIVERT FLOW FROM PE TO PD

DT DIPD

DI 0 8.2 636 3177

DQ 0 0 0 8.1

\*

**KKRTPEJF ROUTE REACH**

KM ROUTE FLOW FROM PE TO JF (ALONG 59TH AVE).

KM TYPE B CHANNEL

RS 2 -1 0

RC 0.100 0.020 0.100 2600 0.0036 0.00

RX 0.0 470.0 476.0 480.0 520.0 524.0 530.0 1000.0

RY 4.7 0.0 0.0 1.0 1.0 0.0 0.0 4.7

\*

**KK SUBJF BASIN**

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

**Druango ADMP**  
**100-yr, 24-hour**

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KM L= .7 Lca= .4 S= 11.1 Kn= .027 LAG= 22.9  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.501  
 LG 0.10 0.15 7.60 0.14 55  
 UI 320 1108 1172 675 319 146 67 20 19 19  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*  
 KK CPJF  
 KM COMBINE FLOWS AT JF.  
 HC 3  
 \*  
 KKRTJFJG ROUTE REACH  
 KM ROUTE FLOW FROM JF TO JE (ALONG 59TH AVE).  
 KM TYPE B CHANNEL  
 RS 4 -1 0  
 RC 0.100 0.020 0.100 6000 0.0036 0.00  
 RX 0.0 470.0 476.0 480.0 520.0 524.0 530.0 1000.0  
 RY 4.7 0.0 0.0 1.0 1.0 0.0 0.0 4.7  
 \*  
 KK SUBJG BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= .7 Lca= .4 S= 11.1 Kn= .027 LAG= 22.9  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.901  
 LG 0.12 0.16 8.40 0.10 51  
 UI 195 717 1181 1396 1191 840 531 336 203 134  
 UI 96 35 20 21 21 20 21 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*  
 KK CPJG  
 KM COMBINE FLOWS AT SALT RIVER.  
 HC 2  
 \*  
 KKCPJGSR  
 HC 2  
 \*  
 KK DISRX  
 KM DUMMY DIVERT TO SALT RIVER (NOT RETURNED)  
 DT DISR2  
 DI 0 10000  
 DQ 0 10000  
 \*  
 \* \*\*\*\*\*  
 \*  
 KK DRUC  
 KM RETURN DIVERT FROM VA  
 DR DIUC  
 \*  
 \*  
 \* KKRTVAUC ROUTE REACH  
 \* KM ROUTE FLOW FROM VA TO UC  
 \* KM Channel geometry changed to match natural conditions 04.11.00 JEP  
 \* KM Manning's N values changed to match approved values 04.11.00 JEP  
 \* RS 9 -1 0  
 \* RC 0.035 0.035 0.035 5200 0.0012 0.00  
 \* RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0  
 \* RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0  
 \*  
 KKRTVAUC  
 KM HEC-RAS REACH  
 KO 1  
 KM ROUTE FLOW FROM VA TO UC (ALONG SPRR).  
 KM Channel geometry changed to match natural conditions 04.11.00 JEP  
 KM Manning's N values changed to match approved values 04.11.00 JEP  
 KM Method changed from Normal Depth Storage to Modified Puls 05.25.00 JEP

**Druango ADMP**  
**100-yr, 24-hour**

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KM Stage-storage values are from HEC-2 results 06.19.00 JEP  
 KM Values transferred directly from HEC-2 file: Tape7\_4 09.29.00 JEP

RS	15	STOR	0	0					
SV	0	39	100	153	175	194	210	222	
SQ	0	100	400	800	1000	1200	1400	1600	

\*

KK SUBUC BASIN

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA	0.483								
LG	0.23	0.15	9.70	0.06	28				
UI	49	105	217	280	354	484	594	451	356
UI	208	113	83	57	41	15	15	14	15
UI	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0

\*

KK@CPUC1

KM ADD HYDROGRAPHS SUBUC TO RTVAUC

HC	2	1.73							
----	---	------	--	--	--	--	--	--	--

\*

KK SUBUA BASIN

KM VALLEY S-GRAPH WAS USED FOR THIS BASIN

BA	0.561								
LG	0.23	0.16	9.70	0.06	22				
UI	44	46	155	204	249	294	350	490	536
UI	354	291	242	198	133	77	73	51	43
UI	13	13	14	13	14	0	0	0	0
UI	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0

\*

KK DRUA

KM RETURN DIVERT FROM UD

DR DIUA

\*

KKRTDIUA ROUTE REACH

KM ROUTE DIVERT TO UA

KM TYPE B CHANNEL

RS	7		-1	0					
RC	0.100	0.020	0.100	5000	0.0014	0.00			
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0	
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7	

\*

KK @CPUA

KM ADD HYDROGRAPHS AT UA

HC	2	1.32							
----	---	------	--	--	--	--	--	--	--

\*

KKDIUAUC

KM DIVERT 20% OF FLOW FROM UA TO TB

DT	DITB								
DI	0	25	50	75	100	150	200		
DQ	0	5	10	15	20	30	40		

\*

KKRTUAUC ROUTE REACH

KM ROUTE FLOW FROM UA TO UC (ALONG 67TH AVENUE).

KM TYPE B CHANNEL

RS	3		-1	0					
RC	0.100	0.020	0.100	2400	0.0017	0.00			
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0	
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7	

\*

KK CPUC2

KM ADD HYDROGRAPHS SUBUC AND RTVAUC TO RTUAUC

HC	2								
----	---	--	--	--	--	--	--	--	--

\*

\* KK RSUC

\* KM ROUTE FLOW FROM UC TO UB OVER 67th AVE.

\* KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0

\* KO 1

\* RS 1 STOR 0 0

**Druango ADMP**  
**100-yr, 24-hour**

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* SV   4.8    6.9    9.9   19.0   33.0   52.6   77.4   108.7   148.6
* SE1036.2 1036.3 1036.5 1037.0 1037.5 1038.0 1038.5 1039.0 1039.5
* SQ     0      0     76    811   2294   4562   7715   11722   16588
*
KKDIUCPC
KM DIVERT FLOW FROM UC TO PC OVER SPRR
KM Revised DQ records to reflect new weir analysis based on survey. 05.04.00 JEP
KM Revised DQ records based on HEC-2 results. 06.19.00 JEP
KM REVERSE DIVERT TO ROUTE AROUND CODE SEQUENCE. 06.21.00 -DCF
DT DIUB
DI     0     100    400    800   1000   1200   1400   1600
DQ     0     100    400    674    825    854    914    945
* DI     0     100    400    800   1000   1200   1400   1600
* DQ     0      0     0     126    175    346    486    655
*
KKRTUCPC  ROUTE REACH
KM ROUTE FLOW FROM UC TO PC (ALONG 67TH AVE).
KM TYPE B CHANNEL
RS     3      -1      0
RC 0.100  0.020  0.100  3000  0.0038  0.00
RX 0.0    470.0  476.0  480.0  520.0  524.0  530.0  1000.0
RY 4.7    0.0    0.0    1.0    1.0    0.0    0.0    4.7
*
KK SUBPC  BASIN
KM VALLEY S-GRAFH WAS USED FOR THIS BASIN
BA 0.300
LG 0.18  0.19   8.80   0.06   42
UI 160    482    829    518    214    79     23     0     0     0
UI 0      0      0      0      0      0     0     0     0     0
UI 0      0      0      0      0      0     0     0     0     0
UI 0      0      0      0      0      0     0     0     0     0
*
KK CPPC
KM COMBINE POSSIBLE FLOWS FROM UC WITH FLOWS FROM PC
HC 2
*
KK RSPC
KM MODIFIED PULS ROUTING FROM PC TO NB.
RS 1     STOR    0      0
SV 29.1  31.8   34.8   38.2   42     46     50.2   78.8   107.9   135.6
SE1029.8 1029.9 1030.0 1030.1 1030.2 1030.3 1030.4 1031.0 1031.5 1032.0
SQ 5     27     70    134    225    357    545    3654   9263   17876
*
KKRTPCNB  ROUTE REACH
KM ROUTE FLOW FROM PC TO NB (ALONG 67TH AVE).
KM TYPE B CHANNEL
RS 4      -1      0
RC 0.100  0.020  0.100  4800  0.0038  0.00
RX 0.0    470.0  476.0  480.0  520.0  524.0  530.0  1000.0
RY 4.7    0.0    0.0    1.0    1.0    0.0    0.0    4.7
*
KK SUBNB  BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L= .9 Lca= .5 S= 16.8 Kn= .073 LAG= 54.0
KM AGRICULTURAL S-GRAFH WAS USED FOR THIS BASIN
BA 0.444
LG 0.13  0.11   6.80   0.17   44
UI 65    194    383    527    550    471    379    271    192    114
UI 86    60     40     38     8      8      8      8      8      9
UI 8     8      0      0      0      0      0      0      0      0
UI 0     0      0      0      0      0      0      0      0      0
UI 0     0      0      0      0      0      0      0      0      0
UI 0     0      0      0      0      0      0      0      0      0
*
KK CPNB1
KM ADD HYDROGRAPHS AT NB
HC 2
*
```

**Druango ADMP**  
**100-yr, 24-hour**

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KKDINBNA  
 KM DIVERT 65% OF FLOW FROM NB TO NA  
 DT DINA  
 DI 0 25 50 75 100 150 200  
 DQ 0 16 33 49 65 98 130  
 \*  
 KKRTNBJD ROUTE REACH  
 KM ROUTE FLOW FROM NB TO JD (ALONG 67TH AVENUE).  
 KM TYPE B CHANNEL  
 RS 4 -1 0  
 RC 0.100 0.020 0.100 5200 0.0054 0.00  
 RX 0.0 470.0 476.0 480.0 520.0 524.0 530.0 1000.0  
 RY 4.7 0.0 0.0 1.0 1.0 0.0 0.0 4.7  
 \*  
 KK SUBPD BASIN  
 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.443  
 LG 0.14 0.17 8.00 0.11 24  
 UI 130 438 708 954 610 331 138 64 27 27  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*  
 KK DRPD  
 KM RETURN DIVERT FROM PE  
 DR DIPP  
 \*  
 KK CPPD2  
 KM ADD HYDROGRAPH AT PD  
 HC 2  
 \*  
 KK RSPD  
 KM MODIFIED PULS ROUTING FROM PD TO NC.  
 \* KO 1  
 RS 1 STOR 0 0  
 SV 25.6 37.6 42.4 51.8 53.9 56.1 58.2  
 SE1030.6 1030.7 1030.8 1030.9 1031.0 1031.1 1031.2  
 SQ 0 4 28 101 246 487 820  
 \*  
 KK RTPDNC ROUTE REACH  
 KM ROUTE FLOW FROM PD TO NC (SHEET FLOW).  
 KM TYPE A CHANNEL  
 RS 5 -1 0  
 RC 0.035 0.035 0.035 3000 0.0027 0.00  
 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0  
 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0  
 \*  
 KK SUBNC BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= .7 Lca= .3 S= 14.7 Kn= .092 LAG= 43.5  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.306  
 LG 0.47 0.25 5.30 0.35 51  
 UI 86 341 534 508 379 219 121 71 44 23  
 UI 9 8 8 9 8 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*  
 KK CPNC  
 KM ADD HYDROGRAPHS AT NC.  
 HC 2  
 \*  
 KK RTNCJE ROUTE REACH  
 KM ROUTE FLOW FROM NC TO JE (SHEET FLOW).  
 KM TYPE A CHANNEL

**Druango ADMP**  
**100-yr, 24-hour**

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RS   12          -1          0
RC 0.035    0.035    0.035    5000   0.0014    0.00
RX  0.0     100.0    400.0    500.0   500.1    600.0    900.0   1000.0
RY  5.0      4.0      1.0      0.0      0.0      1.0      4.0      5.0
*
KKSUBJE1    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       1.1  Lca=       .6  S=       12.7  Kn= .090  LAG=   66.1
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.248
LG  0.10    0.25    5.40    0.32      55
UI  192     630     574     304     118      57      16      11      10      0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
*
KK CPJE1
KM COMBINE FLOWS FROM NC AND JE1
HC  2
*
KKRTJEJD    ROUTE    REACH
KM ROUTE FLOW FROM JE TO JD.
KM TYPE B CHANNEL
RS   3          -1          0
RC 0.035    0.035    0.035    2500   0.0080    0.00
RX  0.0     100.0    400.0    500.0   500.1    600.0    900.0   1000.0
RY  5.0      4.0      1.0      0.0      0.0      1.0      4.0      5.0
*
KK SUBJD    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       1.1  Lca=       .6  S=       12.7  Kn= .090  LAG=   66.1
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.505
LG  0.20    0.17    7.60    0.11      25
UI  54      90      230     325     429      458      443      401      334      286
UI  200     161     115     86      66      50      41      31      31      8
UI  7       6       7       7       7       7       7       7       7       7
UI  0       0       0       0       0       0       0       0       0       0
UI  0       0       0       0       0       0       0       0       0       0
UI  0       0       0       0       0       0       0       0       0       0
UI  0       0       0       0       0       0       0       0       0       0
UI  0       0       0       0       0       0       0       0       0       0
*
KK CPJD
KM ADD HYDROGRAPHS AT JD
HC  3
*
KKDIJDJC
KM DIVERT 37% OF FLOW AT JD TO JC.
DT  DIJC
DI   0      25      50      100     150      200
DQ   0      9       19      37      56      74
*
KKRTJDFC    ROUTE    REACH
KM ROUTE FLOW FROM JD TO FC.
KM TYPE B CHANNEL
RS   2          -1          0
RC 0.100    0.020    0.100    3000   0.0053    0.00
RX  0.0     470.0    476.0    480.0   520.0    524.0    530.0   1000.0
RY  4.7      0.0      0.0      1.0      1.0      0.0      0.0      4.7
*
KKSUBJE2    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       1.1  Lca=       .5  S=       19.8  Kn= .097  LAG=   63.6

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**Druango ADMP**  
**100-yr, 24-hour**

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KM	AGRICULTURAL	S-GRAFH	WAS	USED	FOR THIS	BASIN
BA	0.253					
LG	0.12	0.13	10.10	0.05	44	
UI	109	427	539	421	225	108
UI	8	9	0	0	0	0
UI	0	0	0	0	0	0
UI	0	0	0	0	0	0
UI	0	0	0	0	0	0
UI	0	0	0	0	0	0
UI	0	0	0	0	0	0
*						
KKRETJE2						
KM	DIVERT RETENTION OUT OF MODEL DUE TO RIO DEL REY DEVELOPMENT. -DCF					
KM	TOTAL RETENTION IS 5.9 AF. 80% OF THAT IS USED HERE. -DCF					
DT	RETJE 4.7					
DI	0 10000					
DQ	0 10000					
*						
KKRTJEFC	ROUTE REACH					
KM	ROUTE FLOW FROM JE TO FC (SHEET FLOW).					
KM	TYPE A CHANNEL					
RS	4 -1 0					
RC	0.035 0.035 0.035 4000 0.0080 0.00					
RX	0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0					
RY	5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0					
*						
KK	SUBFC BASIN					
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN					
KM	L= 1.0 Lca= .4 S= 18.6 Kn= .097 LAG= 55.3					
KM	AGRICULTURAL S-GRAFH WAS USED FOR THIS BASIN					
BA	0.357					
LG	0.12 0.16 7.60 0.13 51					
UI	101 397 624 592 442				256	140
UI	10 9 10 10 10				0	0
UI	0 0 0 0 0				0	0
UI	0 0 0 0 0				0	0
UI	0 0 0 0 0				0	0
UI	0 0 0 0 0				0	0
UI	0 0 0 0 0				0	0
*						
KK	CPFC					
KM	ADD HYDROGRAPHS AT FC					
HC	3					
*						
KKCPFCSR						
KM	COMBINE HYDROGRAPHS INTO SALT RIVER AT FC					
HC	2					
*						
KK	DISRX					
KM	DUMMY DIVERT TO SALT RIVER (NOT RETURNED)					
DT	DISR3					
DI	0 10000					
DQ	0 10000					
*						
*	*****					
*	*****					
*	*****					
*	*****					
*	*****					
KKDRUCUB						
KM	RETURN DIVERT FROM UC					
DR	DIUB					
*						
KKRTUCUB						
KM	HEC-RAS REACH					
KM	ROUTE FLOW FROM UC TO UB					
KM	Channel geometry changed to match natural conditions 04.11.00 JEP					
KM	Manning's N values changed to match approved values 04.11.00 JEP					
RS	4 -1 0					

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**Druango ADMP**  
**100-yr, 24-hour**

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RC	0.035	0.035	0.035	1400	0.0043	0.00				
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0		
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0		
*										
KK	SUBUB	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L=	.8	Lca=	.4	S=	16.2	Kn=	.048	LAG=	30.3
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.127									
LG	0.23	0.18	8.80	0.08	12					
UI	20	63	119	158	159	140	103	69	49	31
UI	21	16	11	6	3	2	2	3	2	2
UI	3	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	@CPUB									
KM	ADD HYDROGRAPHS AT UB									
HC	2	2.42								
*										
* KK	RSUB									
* KM	STORAGE ROUTING AT UB (69TH AVE.)									
* KM	Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0									
* KO	1									
* RS	1	STOR	0	0						
* SV	18	28	41	59	82	108				
* SE1035.5	1036.0	1036.5	1037.0	1037.5	1038					
* SQ	1	85	494	1666	4725	9654				
*										
KKDIUBSF										
KM	DIVERT FLOW FROM UB TO UE OVER SPRR.									
KM	Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP									
DT	DIUE									
DI	0	85	1058	1318	1666	2640	4725			
DQ	0	0	0	7	57	290	913			
*										
KKRTUBSF	ROUTE	REACH								
KM	ROUTE FLOW FROM UB TO SF									
KM	TYPE C CHANNEL									
RS	6	-1	0							
RC	0.035	0.035	0.035	2000	0.0007	0.00				
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0		
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0		
*										
KK	SUBTB	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L=	2.0	Lca=	.8	S=	10.2	Kn=	.052	LAG=	67.9
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.888									
LG	0.25	0.18	8.80	0.08	28					
UI	65	67	130	252	382	386	506	550	550	550
UI	462	479	398	371	290	239	191	195	126	106
UI	88	81	60	60	44	37	37	37	8	8
UI	9	8	8	8	9	8	8	8	8	9
UI	8	8	8	8	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	DRTB									
KM	RETURN DIVERT FROM UA									
DR	DITB									
*										
KKRTDITB	ROUTE	REACH								
KM	ROUTE DIVERT TO TB									
KM	TYPE A CHANNEL									
RS	8	-1	0							
RC	0.025	0.025	0.025	5200	0.0019	0.00				
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0		

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**Druango ADMP**  
**100-yr, 24-hour**

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RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0
----	-----	-----	-----	-----	-----	-----	-----	-----

\*

KK CPTB  
KM ADD HYDROGRAPH AT TB  
HC 2  
\*

KKDITBTA  
KM DIVERT 25% OF FLOW TO TA  
DT DITA  
DI 0 25 50 75 100 150 200  
DQ 0 6 13 19 25 38 50  
\*

KKRTTBSF ROUTE REACH  
KM ROUTE FLOW FROM TB TO SF (ALONG 75TH AVENUE).  
KM TYPE B CHANNEL  
RS 2 -1 0  
RC 0.100 0.020 0.100 2400 0.0023 0.00  
RX 0.0 470.0 476.0 480.0 520.0 524.0 530.0 1000.0  
RY 4.7 0.0 0.0 1.0 1.0 0.0 0.0 4.7  
\*

KK SUBSF BASIN  
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
KM L= .9 Lca= .4 S= 9.2 Kn= .097 LAG= 63.6  
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
BA 0.375  
LG 0.49 0.16 9.70 0.07 0  
UI 22 23 32 51 94 132 118 176 167 185  
UI 191 185 170 157 167 134 121 119 86 78  
UI 64 69 49 40 36 29 27 23 20 20  
UI 14 13 12 13 10 3 2 3 3 3  
UI 3 2 3 3 3 2 3 3 3 3  
UI 2 0 0 0 0 0 0 0 0 0  
UI 0 0 0 0 0 0 0 0 0 0  
\*

KK CPSF  
KM ADD HYDROGRAPHS AT SF.  
HC 3  
\*

KK RSSF  
KM STORAGE ROUTING AT SF  
RS 1 STOR 0 0  
SV 6.5 9.6 13.8 18.0 34.2 56.1 84.8 121.0 167.4 219.0  
SE1028.3 1028.6 1028.8 1029.0 1029.5 1030.0 1030.5 1031 1031.5 1032.0  
SQ 0 32 129 348 1591 3946 7404 11827 17168.7 23402  
\*

KKDISFRJ  
KM DIVERT FLOW FROM SF TO RJ1  
DT DIRJ1  
DI 1 200 400 800 1600 3200  
DQ 0.3 60 120 240 480 960  
\*

KKRTSFSH ROUTE REACH  
KM ROUTE FLOW FROM SF TO SH  
KM TYPE C CHANNEL  
RS 9 -1 0  
RC 0.035 0.035 0.035 1200 0.0001 0.00  
RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 600.0  
RY 5.5 5.0 2.5 0.0 0.0 2.0 4.0 5.5  
\*

KK SUBSH BASIN  
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
KM L= .4 Lca= .2 S= 11.1 Kn= .030 LAG= 38.1  
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
BA 0.103  
LG 0.19 0.16 9.70 0.07 40  
UI 45 173 220 171 92 44 24 14 3 3  
UI 4 3 0 0 0 0 0 0 0 0  
UI 0 0 0 0 0 0 0 0 0 0

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**Druango ADMP**  
**100-yr, 24-hour**

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UI	0	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0	0
*											
KK	CPSH										
KM	ADD HYDROGRAPHS AT SH										
HC	2										
*											
KK	RSSH										
KM	MODIFIED PULS ROUTING BEHIND RID.										
* KO	1										
RS	1	STOR	0	0							
SV	19	21	24	30	37	44	46.4				
SE1027.0	1027.1	1027.2	1027.5	1027.7	1028.0	1028.2					
SQ	0	138.6	475.2	1277.3							
SE1027.0	1027.6	1027.8	1028.1								
*											
*											
KKDISHRJ											
KM	DIVERT FLOW FROM SH TO RJ2										
DT	DIRJ2										
DI	0	138.6	475.2	1277.3							
DQ	0	88.6	375.2	1077.3							
*											
*											
KKRTSHSG	ROUTE	REACH									
KM	ROUTE FLOW FROM SH TO SG										
KM	TYPE C CHANNEL										
RS	8	-1	0								
RC	0.035	0.035	0.035	2600	0.0008	0.00					
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0			
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0			
*											
KK	SUBTA	BASIN									
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN										
KM	L= .8 Lca= .4 S= 10.5 Kn= .097 LAG= 55.2										
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN										
BA	0.241										
LG	0.50	0.15	7.00	0.18	0						
UI	15	16	26	43	76	91	98	123	131	131	
UI	131	118	108	122	82	89	70	59	47	46	
UI	38	28	25	20	19	15	15	13	8	9	
UI	9	8	2	2	2	2	2	2	2	2	
UI	2	1	2	2	2	2	2	2	2	2	
UI	2	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
*											
KK	DRTA										
KM	RETURN DIVERT FROM TB										
DR	DITA										
*											
KKRTDITA	ROUTE	REACH									
KM	ROUTE DIVERT TO TA										
KM	TYPE A CHANNEL										
RS	8	-1	0								
RC	0.025	0.025	0.024	2600	0.0004	0.00					
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0			
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0			
*											
KK	@CPTA										
KM	ADD HYDROGRAPHS AT TA										
HC	2 1.13										
*											
KKRTTASG	ROUTE	REACH									
KM	ROUTE FLOW FROM TA TO SG (SHEET FLOW).										
KM	TYPE A CHANNEL										
RS	2	-1	0								
RC	0.025	0.025	0.025	2200	0.0050	0.00					
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0			

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**Druango ADMP**  
**100-yr, 24-hour**

RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0
*								
KK	SUBSG	BASIN						
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN							
KM	L= .6	Lca= .3	S= 5.0	Kn= .077	LAG= 42.6			
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN							
BA	0.136							
LG	0.25	0.15	8.80	0.09	35			
UI	17	33	87	110	139	141	118	105
UI	46	29	22	16	13	9	8	3
UI	2	2	2	2	2	2	0	0
UI	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
*								
KK	CPSG							
KM	ADD HYDROGRAPHS AT SG							
HC	3							
*								
KK	RSSG							
KM	MODIFIED PULS ROUTING BEHIND RID AND 81ST AVENUE							
* KO	1							
RS	1	STOR	0	0				
SV	12.3	13.3	14.9	16.5	18.4	22.4	25.9	35.2
SE	1026.4	1026.6	1026.8	1027.0	1027.2	1027.4	1027.6	1027.9
SQ	0	9	114	525	1221	2143	3276	5343
*								
KKDISGRJ								
KM	DIVERT FLOW FROM SG TO RJ							
DT	DIRJ4							
DI	0	9	114	525	1221			
DQ	0	1	70	400	964			
*								
KKRTSGSE	ROUTE	REACH						
KM	ROUTE FLOW FROM SG TO SE							
KM	TYPE C CHANNEL							
RS	2	-1	0					
RC	0.035	0.035	0.035	1200	0.0030	0.00		
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0
*								
KK	SUBSC	BASIN						
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN							
KM	L= 1.3	Lca= .7	S= 15.2	Kn= .084	LAG= 69.2			
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN							
BA	0.453							
LG	0.43	0.26	5.00	0.39	7			
UI	24	25	28	52	79	127	147	145
UI	208	205	206	195	171	182	174	128
UI	94	83	72	74	57	47	39	36
UI	22	23	22	14	14	14	14	14
UI	3	3	3	3	3	3	3	3
UI	3	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
*								
KKDISCSD								
KM	DIVERT 54% OF FLOW AT SC TO SD.							
DT	DISD							
DI	0	25	50	100	150	200		
DQ	0	14	27	54	81	108		
*								
KKRTSCSE	ROUTE	REACH						
KM	ROUTE FLOW FROM SC TO SE (ALONG 83RD AVENUE).							
KM	TYPE B CHANNEL							
RS	1	-1	0					
RC	0.100	0.020	0.100	1000	0.0022	0.00		
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7

```

*
KK SUBSE   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      .3  Lca=     .2  S=    26.5  Kn= .028  LAG=   11.0
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.125
LG  0.10    0.25    4.80    0.39      55
UI  194      456     217     66       20      7       7      0       0      0
UI    0        0       0       0       0       0       0       0       0       0
UI    0        0       0       0       0       0       0       0       0       0
*
KK CPSE
KM      ADD HYDROGRAPHS AT SE
HC      3
*
KK RSSE
KM      MODIFIED PULS ROUTING AT SE BEHIND THE RID CANAL
* KO    1
RS    1      STOR      0      0
SV  13.5     14.8    17.6    20.5
SE1025.9   1026.0   1026.5  1026.9
SQ  3.14     14.3   479.44  2013.01
*
KKDISERJ
KM DIVERT FLOW FROM SE TO RJ
DT DIRJ5
DI    0        3      142    1100
DQ    0        3      142    1100
*
KKRTSERI   ROUTE   REACH
KM      ROUTE FLOW FROM SE TO RI
KM      TYPE A CHANNEL
RS    4          -1      0
RC  0.035     0.035    0.035   2000  0.0019    0.00
RX  0.0      100.0    400.0   500.0  500.1    600.0   900.0  1000.0
RY  5.0      4.0      1.0      0.0      0.0      1.0      4.0      5.0
*
KK SUBRJ   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      .7  Lca=     .4  S=    5.6  Kn= .045  LAG=   29.7
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.163
LG  0.32    0.15    7.00    0.18      25
UI  13       15      32      62      78      97      110      112      112      93
UI  101      73      73      53      42      40      28       21      18       16
UI  12       12      7       8       7       3       2       2       1       2       2
UI   2        1       2       2       1       2       2       1       2       1
*
KK CPRJ1
KM      RETURN DIVERSION FROM SF
DR DIRJ1
*
KKRTSFRJ   ROUTE   REACH
KM      ROUTE DIVERSION HYDROGRAPH FROM SF TO RJ1
KM      TYPE C CHANNEL
RS    14          -1      0
RC  0.040     0.040    0.040   5300  0.0015    0.00
RX  0.0      20.0     35.0    50.0    50.1    250.0   450.0   550.0
RY  5.0      5.0      2.5      0.0      0.0      2.0      4.0      5.0
*
KK CPRJ2
KM      RETURN DIVERSION FROM SH
DR DIRJ2
*
KKRTSHRJ   ROUTE   REACH
KM      ROUTE HYDROGRAPH FROM SH TO RJ2
KM      TYPE C CHANNEL
RS    6          -1      0

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**Druango ADMP**  
**100-yr, 24-hour**

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RC	0.050	0.050	0.050	2000	0.0015	0.00		
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0
*								
KK@CPRJ3								
KM	COMBINE HYDROGRAPHS AT RJ3							
HC	2	3.95						
*								
KKRTRJ3	ROUTE	REACH						
KM	ROUTE HYDROGRAPH FROM RJ3 TO RJ							
KM	TYPE C CHANNEL							
RS	7		-1	0				
RC	0.035	0.035	0.035	3900	0.0015	0.00		
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0
*								
KKCPRJ4A								
KM	RETURN DIVERT FROM SG							
DR	DIRJ4							
*								
*								
KKCPRJ4B								
KM	COMBINE HYDROGRAPHS AT RJ4							
HC	2							
*								
*								
KKRTSGRJ	ROUTE	REACH						
KM	ROUTE DIVERT FROM SG TO RJ							
KM	TYPE C CHANNEL							
RS	2		-1	0				
RC	0.035	0.035	0.035	1400	0.0019	0.00		
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0
*								
KK CPRJ5								
KM	RETURN DIVERT FROM SE							
DR	DIRJ5							
*								
KKRTSERJ	ROUTE	REACH						
KM	ROUTE DIVERT FROM SE TO RJ							
KM	TYPE C CHANNEL							
RS	9		-1	0				
RC	0.035	0.035	0.035	1000	0.0001	0.00		
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0
*								
*								
KK@CPRJ6								
KM	ADD HYDROGRAPHS AT RJ							
HC	3	4.59						
*								
*								
KK RSRJ								
KM	RESERVOIR ROUTING AT RJ BEHIND 83RD AVE AND THE SPRR							
* KO	1							
RS	1	STOR	0	0				
SV	3.5	6.2	11.0	18.4	30.9	52.2	76.3	
SE1022.1	1022.5	1023.0	1023.5	1024.0	1024.5	1024.9		
SQ	0	50	100	506	899	1369		
SE1022.1	1022.7	1022.9	1023.7	1024.0	1024.2			
*								
*								
KKDIRJPA								
KM	DIVERT FLOW OVER SPRR FROM RJ TO PA							
DT	DIPA2							
DI	0	50	100	506	899	1369		
DQ	0	0	0	6	149	369		
*								

**Druango ADMP**  
**100-yr, 24-hour**

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*
KKRTRJRI    ROUTE    REACH
KM        ROUTE FLOW FROM RJ TO RI1
KM        TYPE C CHANNEL
RS      5          -1          0
RC  0.035    0.035    0.035    2600   0.0019    0.00
RX  0.0       20.0     35.0     50.0    50.1     250.0   450.0   550.0
RY  5.0       5.0      2.5      0.0      0.0      2.0      4.0      5.0
*
KKDIRIOE
KM DIVERT FLOW FROM RI TO OE OVER SPRR.
KM 1/4 MILE WEST OF 83RD AVE.
DT DIOE3
DI  100      400      1392     1300     1400
DQ  0         55       370      680      730
*
KKRTRIRI
KM ROUTE LEFTOVER FLOW FROM RI1 (DIVERSION POINT) TO RI5 (1/2 MILE WEST OF 83RD)
KM TYPE C CHANNEL
RS      4          -1          0
RC  .035     .035     .035     1550   .0019
RX  0         20       35       50       50.1     250      450      550
RY  5         5       2.5      0.0      0.0      2.0      4.0      5.0
*
*
KK SUBUE    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       .3  Lca=       .2  S=      26.5  Kn=  .066  LAG=  17.3
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.063
LG  0.40     0.13     10.10    0.05      14
UI  13        45       75       91       83       66       39       27       17       10
UI  7         5        2        1        2        1        1        2        0        0
UI  0         0        0        0        0        0        0        0        0        0
*
KK DRUE
KM      RETURN DIVERT FROM UB
DR  DIUE
*
KK CPUE
KM      ADD HYDROGRAPHS AT UE
HC  2
*
*
KK RSUE
KM      MODIFIED PULS ROUTING FROM UE TO PB OVER RID
* KO    1
RS  1      STOR      0      0
SV  1.8     4.1     29.1    31.8     34.8     40.0     50.2     59.1     68.6     78.8
SE 1027    1028    1029.8  1029.9  1030.0  1030.2  1030.4  1030.6  1030.8  1031.0
SQ  0       0       5.0     26.6     69.8     224.6    545.0   1176.8   2192.8   3653.9
*
*
KKRTUEPB    ROUTE    REACH
KM        ROUTE FLOW FROM UE TO PB
KM        TYPE A CHANNEL
RS      7          -1          0
RC  0.025    0.025    0.025    4000   0.0015    0.00
RX  0.0      100.0    400.0    500.0   500.1     600.0    900.0   1000.0
RY  5.0      4.0      1.0      0.0      0.0      1.0      4.0      5.0
*
KK SUBPB    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       .9  Lca=       .4  S=      12.1  Kn=  .048  LAG=  42.2
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.439
LG  0.33     0.16     8.80     0.08      24
UI  40       55      117      229      258      321      340      340      282      295

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**Druango ADMP**  
**100-yr, 24-hour**

UI	219	193	142	120	93	68	54	45	37	29
UI	23	23	12	5	5	5	5	5	5	5
UI	5	6	5	5	5	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KK CPPB1

KM ADD HYDROGRAPHS AT PB

HC 2

\*

KKDIPBPA

KM DIVERT 19% OF FLOW FROM PB TO PA

DT DIPA1

DI	0	25	50	75	100	150	200
DQ	0	5	10	14	19	29	38

\*

KKRTPBNA ROUTE REACH

KM ROUTE FLOW FROM PB TO NA ALONG 75th AVE.

KM TYPE B CHANNEL

RS	5	-1	0				
RC	0.100	0.020	0.100	5000	0.0032	0.00	
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0 1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0 4.7

\*

KK SUBNA BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= 1.4 Lca= .7 S= 16.2 Kn= .093 LAG= 81.5

KM AGRICULTURAL S-GRAFH WAS USED FOR THIS BASIN

BA 0.978

LG	0.45	0.15	8.00	0.12	4					
UI	46	47	47	86	114	189	248	283	275	372
UI	352	389	392	398	392	352	331	345	353	249
UI	249	273	190	178	153	136	140	125	90	78
UI	76	63	57	56	43	43	43	33	27	26
UI	27	26	27	8	6	6	6	6	6	5
UI	6	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KK CPNA1

KM RETURN DIVERT FROM NB

DR DINA

\*

KKRTDINA ROUTE REACH

KM ROUTE DIVERT FROM NB TO NA

KM TYPE B CHANNEL

RS	7	-1	0				
RC	0.100	0.020	0.100	5000	0.0012	0.00	
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0 1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0 4.7

\*

KK @CPNA

KM ADD HYDROGRAPHS AT NA

HC 3 2.16

\*

KKRTNAJC ROUTE REACH

KM ROUTE FLOW FROM NA TO JC (ALONG 75TH AVENUE).

KM TYPE B CHANNEL

RS	4	-1	0				
RC	0.100	0.020	0.100	5000	0.0028	0.00	
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0 1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0 4.7

\*

KK SUBJC BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= 1.4 Lca= .7 S= 14.0 Kn= .078 LAG= 76.2

KM AGRICULTURAL S-GRAFH WAS USED FOR THIS BASIN

BA 0.987

**Druango ADMP**  
**100-yr, 24-hour**

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LG	0.40	0.15	7.00	0.17	7					
UI	50	51	51	104	146	235	302	268	360	384
UI	429	423	422	429	380	352	383	352	264	286
UI	255	196	183	149	145	149	96	87	82	67
UI	62	58	46	46	46	29	28	29	28	29
UI	13	7	6	6	7	6	6	7	6	6
UI	7	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KK RETJC

KM DIVERT RETENTION OUT OF MODEL DUE TO MARABELLA DEVELOPMENT. -DCF

KM TOTAL RETENTION IS 6.4 AF. 80% OF THAT IS USED HERE. -DCF

DT RETJC 5.1

DI 0 10000

DQ 0 10000

\*

KK DRJC

KM RETURN DIVERT FROM JD

DR DIJC

\*

KKRTDIJC ROUTE REACH

KM ROUTE DIVERT FROM JD TO JC

KM TYPE B CHANNEL

RS	5	-1	0
----	---	----	---

RC	0.100	0.020	0.100	5000	0.0024	0.00
----	-------	-------	-------	------	--------	------

RX	0.0	470.0	476.0	480.0	520.0	524.0
----	-----	-------	-------	-------	-------	-------

RY	4.7	0.0	0.0	1.0	1.0	0.0
----	-----	-----	-----	-----	-----	-----

\*

KK @CPJC

KM ADD HYDROGRAPHS AT JC

HC 3 3.15

\*

KKDIJCJB

KM DIVERT 46% OF FLOW AT JC TO JB.

DT DIJB

DI	0	25	50	75	100	150	200
----	---	----	----	----	-----	-----	-----

DQ	0	12	23	35	46	69	92
----	---	----	----	----	----	----	----

\*

KKRTJCFB ROUTE REACH

KM ROUTE FLOW FROM JC TO FB (ALONG 75TH AVENUE).

KM TYPE B CHANNEL

RS	3	-1	0
----	---	----	---

RC	0.100	0.020	0.100	4200	0.0032	0.00
----	-------	-------	-------	------	--------	------

RX	0.0	470.0	476.0	480.0	520.0	524.0
----	-----	-------	-------	-------	-------	-------

RY	4.7	0.0	0.0	1.0	1.0	0.0
----	-----	-----	-----	-----	-----	-----

\*

KK SUBFB BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= 1.2 Lca= .4 S= 16.2 Kn= .090 LAG= 59.8

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.656

LG	0.37	0.21	6.60	0.18	6
----	------	------	------	------	---

UI	49	50	100	201	287	304	386	418	415	398
----	----	----	-----	-----	-----	-----	-----	-----	-----	-----

UI	347	374	267	282	197	166	143	129	89	79
----	-----	-----	-----	-----	-----	-----	-----	-----	----	----

UI	60	54	45	42	28	28	28	15	7	6
----	----	----	----	----	----	----	----	----	---	---

UI	6	6	6	7	6	6	6	6	7	6
----	---	---	---	---	---	---	---	---	---	---

UI	6	6	6	0	0	0	0	0	0	0
----	---	---	---	---	---	---	---	---	---	---

UI	0	0	0	0	0	0	0	0	0	0
----	---	---	---	---	---	---	---	---	---	---

UI	0	0	0	0	0	0	0	0	0	0
----	---	---	---	---	---	---	---	---	---	---

\*

KK CPFB

KM ADD HYDROGRAPHS AT FB

HC 2

\*

KKDIFBSR

KM DUMMY DIVERT TO ROUTE FLOW AS REQUIRED

KM COMBINES PREVIOUS FLOW INTO SALT RIVER

**Druango ADMP**  
**100-yr, 24-hour**

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DT DISRX
DI    0     25     50     75    100    150    200   10000
DQ    0     25     50     75    100    150    200   10000
* ****
* ****
* ****
*
KK SUBPA   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      1.1  Lca=      .6  S=      16.7  Kn= .065  LAG=  46.5
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.477
LG  0.33    0.17    7.30    0.14    21
UI  38       42      87     174     220    277    301    323    319    278
UI  282      235    214     161     131    110     98     66     57     48
UI  37       35      27     22      21     18      5      5      5      4
UI  5        5       5      4       5      5      5      5      4      5
UI  5        0       0      0       0      0      0      0      0      0
UI  0        0       0      0       0      0      0      0      0      0
*
KK DRPA
KM RETURN DIVERT FROM PB.
DR DIPA1
*
KKR TDIPA  ROUTE REACH
KM ROUTE DIVERT FROM PB TO PA
KM TYPE B CHANNEL
RS  5          -1      0
RC 0.100      0.020    0.100   5400   0.0032    0.00
RX  0.0       470.0    476.0   480.0   520.0    524.0   530.0  1000.0
RY  4.7       0.0      0.0     1.0     1.0     0.0     0.0     0.0     4.7
*
KK DRPA2
KM RETURN DIVERT FROM RJ.
DR DIPA2
*
KK RTRJPA  ROUTE REACH
KM ROUTE DIVERT FROM RJ TO PA
KM TYPE B CHANNEL
RS  2          -1      0
RC 0.100      0.020    0.100   2400   0.0054    0.00
RX  0.0       470.0    476.0   480.0   520.0    524.0   530.0  1000.0
RY  4.7       0.0      0.0     1.0     1.0     0.0     0.0     0.0     4.7
*
KK @CPPA
KM ADD HYDROGRAPHS AT PA
HC  3       5.07
*
KKDIPAOE
KM DIVERT 18% OF FLOW AT PA TO OE.
DT DIOE
DI  0     25     50     75    100    150    200
DQ  0      5      9     14     18     27     36
*
KK RTPAMH  ROUTE REACH
KM ROUTE FLOW FROM PA TO MH (ALONG 83RD AVENUE).
KM TYPE B CHANNEL
RS  4          -1      0
RC 0.100      0.020    0.100   2640   0.0012    0.00
RX  0.0       470.0    476.0   480.0   520.0    524.0   530.0  1000.0
RY  4.7       0.0      0.0     1.0     1.0     0.0     0.0     0.0     4.7
*
KK SUBMH   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      .7   Lca=      .3   S=      8.8   Kn= .057  LAG=  54.6
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.239

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**Druango ADMP**  
**100-yr, 24-hour**

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LG	0.50	0.15	8.80	0.09	0					
UI	22	32	70	128	157	174	189	184	159	154
UI	128	93	73	68	42	34	29	21	20	13
UI	13	11	3	3	3	3	3	2	3	3
UI	3	3	3	2	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	CPMH									
KM	ADD HYDROGRAPHS AT PH									
HC	2									
*										
KKRTMHMD	ROUTE	REACH								
KM	ROUTE FLOW FROM PA TO MH (ALONG 83RD AVENUE).									
KM	TYPE B CHANNEL									
RS	4	-1	0							
RC	0.100	0.020	0.100	2640	0.0012	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										
KK	SUBMD	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L= 1.4 Lca= .6 S= 14.3 Kn= .073 LAG= 82.5									
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.255									
LG	0.15	0.08	7.60	0.11	30					
UI	22	28	60	121	132	172	187	190	169	162
UI	139	126	87	73	67	43	37	28	24	21
UI	15	13	13	7	3	3	3	3	3	2
UI	3	3	3	3	3	2	3	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	RETM									
KM	DIVERT RETENTION OUT OF MODEL DUE TO SUNDANCE RANCH DEVELOPMENT. -DCF									
KM	TOTAL RETENTION IS 22.7 AF. 80% OF THAT IS USED HERE. -DCF									
DT	RETM	18.2								
DI	0	10000								
DQ	0	10000								
*										
KK	CPMD									
KM	ADD HYDROGRAPHS AT MD									
HC	3									
*										
KKDIMDJB										
KM	DIVERT 21% OF FLOW FROM MD TO JB.									
DT	DIJB1									
DI	0	25	50	75	100	150	200			
DQ	0	5	10	16	21	32	42			
*										
KK	KKDIMDMF									
KM	DIVERT FLOW FROM MD TO MF									
KM	DUMMY DIVERT TO ROUTE FLOW AROUND CODE SEQUENCE.									
DT	DIMFX									
DI	0	10000								
DQ	0	10000								
*										
KK	SUBMI	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L= .7 Lca= .3 S= 8.8 Kn= .057 LAG= 54.6									
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.409									
LG	0.38	0.15	8.40	0.11	16					
UI	48	93	245	318	392	405	353	333	259	180
UI	146	96	70	55	45	28	28	14	6	6

**Druango ADMP**  
**100-yr, 24-hour**

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UI	6	6	6	6	6	6	6	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	RETMI									
KM	DIVERT RETENTION OUT OF MODEL DUE TO SWIFT TRANSPORTATION DEVELOPMENT. -DCF									
KM	TOTAL RETENTION IS 15.2 AF. 80% OF THAT IS USED HERE. -DCF									
DT	RETMI	12.2								
DI	0	10000								
DQ	0	10000								
*										
KK	SUBMG BASIN									
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L= .7 Lca= .3 S= 8.8 Kn= .057 LAG= 54.6									
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.082									
LG	0.27	0.15	7.00	0.17	32					
UI	23	91	144	136	101	59	32	20	11	6
UI	2	3	2	2	2	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	RETMG									
KM	DIVERT RETENTION OUT OF MODEL DUE TO SWIFT TRANSPORTATION DEVELOPMENT. -DCF									
KM	TOTAL RETENTION IS 6.2 AF. 80% OF THAT IS USED HERE. -DCF									
DT	RETMG	5.0								
DI	0	10000								
DQ	0	10000								
*										
KK	CPMG									
KM	COMBINE FLOWS FROM MI AND MG.									
HC	2									
*										
KK	KRTMGJB ROUTE REACH									
KM	ROUTE FLOW FROM MG TO JB (SHEET FLOW).									
KM	TYPE A CHANNEL									
RS	15	-1	0							
RC	0.100	0.100	0.100	6200	0.0031	0.00				
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0		
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0		
*										
KK	SUBJB BASIN									
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L= 1.3 Lca= .7 S= 17.4 Kn= .100 LAG= 79.4									
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.988									
LG	0.50	0.25	5.70	0.31	0					
UI	46	46	46	80	105	174	239	283	255	352
UI	340	386	388	390	384	375	325	322	346	306
UI	240	261	235	180	175	138	130	143	106	88
UI	74	76	58	56	54	42	42	42	33	26
UI	26	26	26	27	10	6	6	6	5	6
UI	6	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	CPJB									
KM	ADD HYDROGRAPHS AT JB									
HC	2									
*										
KK	DRJB									
KM	RETURN DIVERT FROM JC									
DR	DIJB									
*										

**Druango ADMP**  
**100-yr, 24-hour**

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KKRTDIJB   ROUTE   REACH
KM         ROUTE DIVERT FROM MD TO JB
KM         TYPE B CHANNEL
RS    7           -1           0
RC  0.100    0.020    0.100    5000  0.0015    0.00
RX  0.0       470.0    476.0    480.0  520.0    524.0    530.0  1000.0
RY  4.7       0.0       0.0       1.0    1.0       0.0       0.0     4.7
*
KK CPJB2
KM         RETURN DIVERT FROM MD
DR DIJB1
*
KKRDIJB1
KM         ROUTE DIVERT FROM MD TO JB
KM         TYPE B CHANNEL
RS    9           -1           0
RC  .1        .02        .1       5200  .0030
RX  0       470       476       480      520      524      530     1000
RY  4.7       0       0       1       1       0       0     4.7
*
KK @CPJB
KM ADD HYDROGRAPHS AT JB
HC  3       4.14
*
KKDIJBEE
KM         DIVERT 36% OF FLOW AT JB TO EE.
DT  DIEE
DI  0       25       50       75      100      150      200
DQ 0       9       18       27      36       54       72
*
KKRTJBFA   ROUTE   REACH
KM         ROUTE FLOW FROM JB TO FA.
KM         TYPE B CHANNEL
RS   10           -1           0
RC  0.100    0.020    0.100    6000  0.0009    0.00
RX  0.0       470.0    476.0    480.0  520.0    524.0    530.0  1000.0
RY  4.7       0.0       0.0       1.0    1.0       0.0       0.0     4.7
*
KK SUBFA   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L= 1.4 Lca= .8 S= 7.9 Kn= .106 LAG= 105.0
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.764
LG  0.36    0.04    5.30    0.35    19
UI  37       37       37       70      93      154      204      215      227      287
UI  292      309      309      314      310      269      262      279      258      197
UI  203      197      148      141      112      105      116      80       70       60
UI  58       45       46       39       34       34       33       21       21       21
UI  21       21       14       5        4        5        5        4        5        4
UI  5        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
UI  0        0        0        0        0        0        0        0        0        0
*
KK CPFA
KM ADD HYDROGRAPHS AT FA.
HC  2
*
KKDIFASR
KM DUMMY DIVERT TO ROUTE FLOW AS REQUIRED
KM COMBINES PREVIOUS FLOW INTO SALT RIVER
DTDISRX2
DI  0       10000
DQ 0       10000
* ****
* ****

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**Druango ADMP**  
**100-yr, 24-hour**

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* ****
*
KK@CPRI1
KM ADD HYDROGRAPHS AT RI (1/4 MILE WEST OF 83RD AVE.)
HC    4      5.16
*
KK SUBRI   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       .6  Lca=     .2  S=    19.3  Kn= .081  LAG=  27.9
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.232
LG  0.38    0.15    7.60    0.14      24
UI  30        70    166    221    259    237    220    168    116      92
UI  56        42     31     24     17     13      4      4      4      4
UI   3         4      4      4      4      0      0      0      0      0
UI   0         0      0      0      0      0      0      0      0      0
*
KK SUBSB   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       .5  Lca=     .3  S=    15.1  Kn= .087  LAG=  35.7
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.168
LG  0.50    0.15    9.70    0.07      0
UI  15        20     41     85     90    120    126    129    110    111
UI  84        80     58     44     41     27     23     18     14     14
UI   8         9      8      2      2      2      2      2      1      2
UI   2         2      2      2      2      2      0      0      0      0
UI   0         0      0      0      0      0      0      0      0      0
*
*
KK RSSB
KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND RID CANAL.
* KO    1
RS   1      STOR      0      0
SV   2.2     5.6    11.9    21.4    33.8
SE1024.0 1024.5 1025.0 1025.5 1025.9
SQ    0      94     581    2114    4864
*
KK SUBSD   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       .6  Lca=     .3  S=    12.3  Kn= .091  LAG=  43.6
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.168
LG  0.43    0.28    6.60    0.18      0
UI  21        46    114    146    180    174    154    123    96      64
UI  53        32     25     19     13     12      5      3      2      3
UI   3         2      3      3      2      0      0      0      0      0
UI   0         0      0      0      0      0      0      0      0      0
UI   0         0      0      0      0      0      0      0      0      0
UI   0         0      0      0      0      0      0      0      0      0
*
*
KK DRSD
KM RETURN DIVERT FROM SC.
DR  DISD
*
KK @CPSD
KM ADD HYDROGRAPHS AT SD.
KM ROUTING STEP NOT INCLUDED DUE TO SHORT ROUTING LENGTH
HC    3      .79
*
KK RSSD
KM MODIFIED PULS ROUTING BEHIND CANAL, NORTH OF VAN BUREN.
* KO    1
RS   1      STOR      0      0
SV   0      .01      .1      .6      1.8      5      9      14      23
SE1021.4 1022.8 1023 1023.3 1023.6 1024 1024.3 1024.6 1025
SQ    0      .16     46     534    939    1427    1993    2767

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**Druango ADMP**  
**100-yr, 24-hour**

SE1021.4	1021.5	1022	1023	1023.5	1024	1024.5	1025
*							
*							
KKRTSDRI	ROUTE	REACH					
KM	ROUTE FLOW FROM SD TO RI						
KM	TYPE A CHANNEL						
RS	3	-1	0				
RC	0.035	0.035	0.035	2400	0.0046	0.00	
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0 1000.0
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0 5.0
*							
KK CPR12							
KM ADD HYDROGRAPHS AT RI (1/2 MILE WEST OF 83RD AVE)							
HC	3						
*							
KK RSRI							
KM	MODIFIED PULS ROUTING BEHIND SPRR.						
* KO	1						
RS	1	STOR	-1	0			
SV	0	0	.1	.3	1.2	3.0	6.5 13.76 21.8 35.6
SE1014.0	1014.1	1014.5	1015.0	1015.5	1016.0	1016.5	1017.0 1017.5 1018.0
SQ	0	4	142	573	1333	3217	5957 9319 13343 18206
*							
*							
KKRTRIRH	ROUTE	REACH					
KM	ROUTE FLOW FROM RI TO RH						
KM	TYPE C CHANNEL						
RS	2	-1	0				
RC	0.100	0.020	0.100	2400	0.0029	0.00	
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0 1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0 4.7
*							
*							
KK SUBSA	BASIN						
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN						
KM	L= .8 Lca= .3 S= 9.6 Kn= .047 LAG= 26.0						
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN						
BA	0.420						
LG	0.17	0.15	9.70	0.06	25		
UI	55	126	299	401	469	429	399 305 210 165
UI	102	75	56	43	32	23	7 7 7 7
UI	7	7	7	6	7	0	0 0 0 0
UI	0	0	0	0	0	0	0 0 0 0
*							
*							
KKDISARF							
KM	DIVERT 50% OF FLOW AT SA TO RF						
DT	DIRF						
DI	0	25	50	75	100	150	200
DQ	0	13	25	38	50	75	100
*							
*							
KKRTSARH	ROUTE	REACH					
KM	ROUTE FLOW FROM SA TO RH.						
KM	TYPE B CHANNEL						
RS	3	-1	0				
RC	0.100	0.020	0.100	2400	0.0015	0.00	
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0 1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0 4.7
*							
KK SUBRH	BASIN						
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN						
KM	L= .6 Lca= .3 S= 15.6 Kn= .100 LAG= 46.8						
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN						
BA	0.245						
LG	0.50	0.15	8.80	0.09	0		
UI	19	20	43	84	112	136	146 163 161 146
UI	140	126	104	93	71	56	57 35 30 25

**Druango ADMP**  
**100-yr, 24-hour**

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UI	22	17	17	11	11	11	5	2	2	3
UI	2	3	2	2	3	2	3	2	3	2
UI	2	3	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	CPRH									
KM	ADD HYDROGRAPHS AT RH.									
HC	3									
*										
KK	RSRH									
KM	MODIFIED PULS ROUTING BEHIND SPRR.									
RS	1	STOR	0	0						
SV	1.0	1.2	1.5	1.8	2.3	4.4	7.7	13.6	24.5	40.80
SE1008.8	1008.9	1009.0	1009.1	1009.2	1009.7	1010.2	1010.7	1011.2	1011.7	
SQ	0	50	100	500	750	1000				
SE1008.8	1009.3	1009.4	1009.7	1009.9	1010.0					
*										
KK	CPRH2									
DT	DIOE2									
DI	5733	9002	13168							
DQ	0	0	322							
KM	*** DIVERT ROUTING IGNORED DUE TO LACK OF DIVERTED FLOW									
*										
KKRRHOG1	ROUTE REACH									
KM	ROUTE FLOW FROM RH TO OG1									
KM	TYPE C CHANNEL									
RS	2	-1	0							
RC	0.035	0.035	0.035	1200	0.0019	0.00				
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0		
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0		
*										
KK	DIOG1									
DT	DIOD1									
DI	715	1200								
DQ	0	0								
*										
KKRRHOG2	ROUTE REACH									
KM	ROUTE FLOW FROM OG1 TO OG									
KM	TYPE C CHANNEL									
RS	9	-1	0							
RC	0.035	0.035	0.035	4100	0.0019	0.00				
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0		
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0		
*										
KK	SUBRG BASIN									
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L= .6 Lca= .3 S= 14.3 Kn= .080 LAG= 41.7									
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.111									
LG	0.05	0.15	9.70	0.07	90					
UI	135	360	230	84	32	7	6	6	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	RETRG									
KM	DIVERT RETENTION OUT OF MODEL DUE TO FREIGHTLINER AZ. LTD. DEVELOPMENT -DCF									
KM	TOTAL RETENTION IS 6.9 AF. 80% OF THAT IS USED HERE. -DCF									
DT	RETRF 5.5									
DI	0 10000									
DQ	0 10000									
*										
KKRTRGRF	ROUTE REACH									
KM	ROUTE FLOW FROM RG TO RF (ALONG 99TH AVENUE)									
KM	TYPE B CHANNEL									
RS	3	-1	0							
RC	0.100	0.020	0.100	2700	0.0022	0.00				

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**Druango ADMP**  
**100-yr, 24-hour**

RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7
*								
KK SUBRF	BASIN							
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN							
KM	L= 1.2 Lca=.7 S= 11.6 Kn=.068 LAG= 57.1							
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN							
BA	0.629							
LG	0.33	0.15	9.70	0.07	23			
UI	38	39	59	96	175	227	220	293
UI	327	323	270	284	275	202	227	159
UI	112	98	73	62	53	48	40	35
UI	22	22	22	15	5	5	4	5
UI	5	4	5	5	5	5	4	5
UI	5	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
*								
KK DRRF								
KM	RETURN DIVERT FROM SA.							
DR	DIRF							
*								
KK RTDIRF	ROUTE REACH							
KM	ROUTE DIVERT FROM SA TO RF							
KM	TYPE B CHANNEL							
RS	8	-1	0					
RC	0.100	0.020	0.100	5300	0.0011	0.00		
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7
*								
KK @CPRF								
KM	ADD HYDROGRAPHS AT RF.							
HC	3	1.16						
*								
KK DIRFRE								
KM	DIVERT 20% OF FLOW FROM RF TO RE							
DT	DIRE							
DI	0	25	50	75	100	150	200	
DQ	0	5	10	15	20	30	40	
*								
KK RTFOG	ROUTE REACH							
KM	ROUTE FLOW FROM RF TO OG (ALONG 99TH AVENUE)							
KM	TYPE B CHANNEL							
RS	3	-1	0					
RC	0.100	0.020	0.100	2700	0.0022	0.00		
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7
*								
KK SUBOG	BASIN							
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN							
KM	L= 1.1 Lca=.6 S= 12.3 Kn=.061 LAG= 46.0							
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN							
BA	0.492							
LG	0.23	0.15	9.70	0.07	30			
UI	42	51	109	215	248	317	356	355
UI	285	232	188	147	124	101	73	59
UI	37	24	24	24	7	5	5	6
UI	5	6	5	5	5	6	5	5
UI	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
*								
KK CPOG								
KM	ADD HYDROGRAPHS AT OG							
HC	3							
*								
KK RSOG								
KM	MODIFIED PULS ROUTING FROM OG TO OF.							
* KO	1							
RS	1	STOR	-1	0				

**Druango ADMP**  
**100-yr, 24-hour**

SV	27	29.6	32.3	35.2	51.6	72.2	97.1	126.7	155.4	
SE1002.2	1002.3	1002.4	1002.5	1003.0	1003.5	1004.0	1004.5	1004.9		
SQ	0	4	23	68	922	3346	7315	12805	18312	
*										
*										
KKDIOGOD										
KM		DIVERT FLOW FROM OG TO OD OVER SPRR								
DT	DIOD2									
DI	0	251	922	3346	7315	12805	18312			
DQ	0	40	250	1174	2870	5440	8134			
*										
*										
KKRTOGOF	ROUTE	REACH								
KM		ROUTE FLOW FROM OG TO OF								
KM		TYPE C CHANNEL								
RS	3	-1	0							
RC	0.035	0.035	0.035	2400	0.0033	0.00				
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	500.0		
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0		
*										
KK	SUBOF	BASIN								
KM		THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN								
KM	L=	.7	Lca=	.3	S=	27.9	Kn=	.069	LAG=	42.9
KM		AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN								
BA	0.246									
LG	0.19	0.15	8.80	0.09	62					
UI	58	215	361	384	322	222	132	76	49	30
UI	20	6	6	6	6	6	6	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	SUBRE									
KM		THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN								
KM	L=	.9	Lca=	.5	S=	6.3	Kn=	.100	LAG=	74.7
KM		AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN								
BA	.36									
LG	.50	.00	7.30	.16	.00					
UI	18.	18.	18.	35.	47.	78.	103.	100.	114.	137.
UI	147.	151.	151.	151.	149.	126.	126.	135.	116.	94.
UI	105.	83.	69.	63.	53.	52.	52.	34.	31.	29.
UI	24.	22.	21.	16.	16.	16.	12.	10.	10.	10.
UI	10.	9.	2.	2.	2.	2.	2.	2.	2.	2.
UI	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
UI	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.
UI	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
*										
KK	CPRE									
KM		RETURN DIVERT FROM RF								
DR	DIRE									
*										
KKRTDIRE	ROUTE	REACH								
KM		ROUTE DIVERT FROM RF TO RE								
KM		TYPE B CHANNEL								
RS	5	-1	0							
RC	0.100	0.020	0.100	2600	0.0008	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										
KK	@CPRE									
KM		ADD HYDROGRAPHS AT RE								
HC	2	1.53								
*										
KKRTREOF	ROUTE	REACH								
KM		ROUTE FLOW FROM RE TO OF								
KM		TYPE A CHANNEL								
RS	11	-1	0							
RC	0.100	0.100	0.100	2700	0.0044	0.00				

**Druango ADMP**  
**100-yr, 24-hour**

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RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0
*								
KK	CPOF							
KM	ADD HYDROGRAPHS AT OF.							
HC	3							
*								
KK	RSOF							
KM	MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.							
*	KO	1						
RS	1	STOR	0	0				
SV	48.3	49.5	56.8	65.2	74.8	85.5	96.6	99.2
SE	995.4	995.5	996.0	996.5	997.0	997.5	998.0	999
SQ	0	50	100	500	750	1000		
SE	995.4	996.0	996.5	997.3	997.5	997.6		
*								
*								
KK	KKRTOFOB	ROUTE	REACH					
KM	ROUTE FLOW FROM OF TO OB							
KM	TYPE C CHANNEL							
RS	9	-1	0					
RC	0.035	0.035	0.035	3600	0.0011	0.00		
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0
*								
KK	SUBOB	BASIN						
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN							
KM	L= 1.1 Lca= .6 S= 17.0 Kn= .063 LAG= 68.9							
KM	AGRICULTURAL S-GRAFH WAS USED FOR THIS BASIN							
BA	0.445							
LG	0.11	0.25	5.10	0.38	78			
UI	80	278	484	628	567	471	329	214
UI	61	42	20	10	9	9	10	9
UI	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0
*								
KK	SUBRD							
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN							
KM	L= .9 Lca= .5 S= 10.5 Kn= .100 LAG= 67.8							
KM	AGRICULTURAL S-GRAFH WAS USED FOR THIS BASIN							
BA	.38							
LG	.50	.00	5.80	.28	.00			
UI	20.	20.	24.	43.	66.	107.	122.	122.
UI	172.	172.	172.	159.	143.	153.	141.	107.
UI	78.	68.	59.	63.	46.	38.	33.	29.
UI	19.	19.	18.	12.	12.	12.	12.	11.
UI	3.	3.	3.	3.	3.	3.	3.	3.
UI	3.	3.	3.	3.	3.	3.	3.	3.
UI	0.	0.	0.	0.	0.	0.	0.	0.
UI	0.	0.	0.	0.	0.	0.	0.	0.
*								
KKDIRDOB								
KM	DIVERT 40% OF FLOW FROM RD TO OB							
DT	DIOB							
DI	0	25	50	75	100	150	200	
DQ	0	10	20	30	40	60	80	
*								
KKRTRDRC	ROUTE	REACH						
KM	ROUTE FLOW FROM RD TO RC (ALONG VAN BUREN).							
KM	TYPE B CHANNEL							
RS	6	-1	0					
RC	0.100	0.020	0.100	5200	0.0023	0.00		
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7

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**Druango ADMP**  
**100-yr, 24-hour**

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\*

KK SUBRC BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= 1.2 Lca= .6 S= 14.0 Kn= .100 LAG= 78.2

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.683

LG	0.50	0.23	6.20	0.24	0	UI	32	33	32	58	76	125	169	197	184	260
UI	231	270	270	274	270	253	228	227	227	228	227	227	227	249	249	191
UI	169	191	146	121	115	96	91	100	100	100	100	100	100	63	63	58
UI	52	48	40	40	33	30	29	29	29	29	29	29	29	18	18	18
UI	18	18	19	13	4	4	4	4	4	4	4	4	4	5	5	4
UI	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\*

KK CPRC

KM ADD HYDROGRAPHS AT RC

HC 2

\*

KKRTRCRB ROUTE REACH

KM ROUTE FLOW FROM RC TO RB (ALONG VAN BUREN).

KM TYPE B CHANNEL

RS	4	-1	0	RC	0.100	0.020	0.100	5200	0.0042	0.00	RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	

\*

KK SUBRB BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= 1.1 Lca= .6 S= 19.3 Kn= .086 LAG= 59.9

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.549

LG	0.47	0.28	5.40	0.32	0	UI	34	35	53	88	160	201	203	257	287	288
UI	290	278	239	257	223	180	194	194	194	194	194	194	194	134	134	121
UI	106	70	61	54	42	42	32	32	32	32	32	32	32	31	31	27
UI	19	20	19	5	4	5	4	4	4	4	4	4	4	4	4	4
UI	4	4	5	4	4	5	4	4	4	4	4	4	4	4	4	5
UI	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\*

KK CPRB

KM ADD HYDROGRAPHS AT RB

HC 2

\*

KKDIRBKA

KM DIVERT 50% OF FLOW FROM RB TO KA3

DT DIKA3

DI	0	25	50	75	100	150	200
DQ	0	13	25	38	50	75	100

\*

KKRTRBRA ROUTE REACH

KM ROUTE FLOW FROM RB TO RA (ALONG VAN BUREN).

KM TYPE B CHANNEL

RS	13	-1	0	RC	0.100	0.020	0.100	2440	0.0001	0.00	RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	

\*

KK SUBRA BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= .8 Lca= .4 S= 9.2 Kn= .100 LAG= 58.3

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.222

LG	0.50	0.25	4.80	0.46	0	UI	14	14	23	37	68	82	87	108	118	118

**Druango ADMP**  
**100-yr, 24-hour**

UI	121	109	98	106	86	76	73	54	46	40
UI	41	27	23	21	17	15	13	13	9	8
UI	8	8	5	2	1	2	2	2	1	2
UI	2	2	1	2	2	2	1	2	2	2
UI	1	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	CPR									
KM	ADD HYDROGRAPHS AT RA									
HC	2									
*										
KKDIRAKA										
KM	DIVERT FLOW FROM RA TO KA4									
DT	DIKA4									
DI	0	20	50	80	100	154	200			
DQ	0	3	25	58	77	129	174			
*										
KKDIKAAF										
KM	DUMMY DIVERT TO ROUTE FLOW AS REQUIRED.									
DT	DIAFX									
DI	0	25	50	75	100	150	200			
DQ	0	25	50	75	100	150	200			
*										
KK	CPOB2									
KM	RETURN DIVERT FROM RD									
DR	DIQB									
*										
KKRTDIOB	ROUTE REACH									
KM	ROUTE FLOW FROM RD TO OB									
KM	TYPE B CHANNEL									
RS	11	-1	0							
RC	0.100	0.020	0.100	5600	0.0007	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										
KK	@CPOB									
KM	ADD HYDROGRAPHS AT OB									
HC	4	9.57								
*										
KK	RSOB									
KM	MODIFIED PULS ROUTING THROUGH THE PONDING BEHIND SPRR.									
* KO	1									
RS	1	STOR	0	0						
SV	13.2	16.6	26.8	40.1	56.6	76.3	98.9			
SE	990.8	991.0	991.5	992.0	992.5	993.0	993.5			
SQ	0	50	100	500	750	1000				
SE	991.5	993.06	993.16	993.69	993.9	994.07				
*										
*										
KKRTOBLE	ROUTE REACH									
KM	ROUTE FLOW FROM OB TO LE.									
KM	TYPE C CHANNEL									
RS	7	-1	0							
RC	0.035	0.035	0.035	2600	0.0008	0.00				
RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0		
RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0		
*										
KK	SUBLE BASIN									
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L= .7 Lca= .3 S= 14.7 Kn= .087 LAG= 43.1									
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.250									
LG	0.45	0.25	4.80	0.45	7					
UI	20	22	45	92	115	145	158	169	167	146
UI	148	123	112	85	68	58	51	35	30	25
UI	20	18	14	11	11	10	2	3	2	3
UI	2	3	2	3	2	3	2	3	2	3
UI	2	0	0	0	0	0	0	0	0	0

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*
KK  CPLE
KM      ADD HYDROGRAPHS AT LE
HC      2
*
KK  RSLE
KM      MODIFIED PULS ROUTING BEHIND DITCH AND SPRR
* KO    1
RS     1      STOR      0      0
SV    16.7    18.4    20.2    22.0    24.5    27.7    31.1    34.9    38.9    43.3
SE   991.4   991.5   991.6   991.7   991.8   991.9   992.0   992.1   992.2   992.3
SQ     0      4.7    33.7    91.1   178.5   367.6   688.3  1135.1  1705.8  2391.4
*
KKDILELD
KM      DIVERT FLOW FROM LE1 TO SUBBASIN LD
DT  DILD
DI  178.5   367.6   688.3  1135.1  1705.8
DQ     0      62.6   214.9   444.3   745.9
*
KKRTLEKD  ROUTE REACH
KM      ROUTE FLOW FROM LE TO KD (ALONG SPRR).
KM      TYPE C CHANNEL
RS     8      -1      0
RC  0.035   0.035   0.035   2600   0.0008   0.00
RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
RY     5.0     5.0    2.5     0.0     0.0     2.0     4.0     5.0
*
KK  SUBKD  BASIN
KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM  L= 1.4  Lca= .7  S= 12.9  Kn= .096  LAG= 85.3
KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.702
LG  0.48   0.25   4.90   0.43     2
UI   30     30     31     42     64     91    138    173    171    176
UI  250    208    251    254    254    250    255    220    209    222
UI  230    172    159    173    151    119    114    94     87     89
UI   89     58     55     48     47     37     38     36     27     27
UI   28     25     18     17     17     17     17     17      6     4
UI     4     0      0      0      0      0      0      0      0      0
UI     0     0      0      0      0      0      0      0      0      0
UI     0     0      0      0      0      0      0      0      0      0
UI     0     0      0      0      0      0      0      0      0      0
*
KK  CPKD
KM      ADD HYDROGRAPHS AT KD.
HC      2
*
*
KK  RSKD
KM      MODIFIED PULS ROUTING BEHIND 115TH AVE
* KO    1
RS     1      STOR      0      0
SV     3      3.4     3.8     4.2     4.8     5.7     6.8     8.1     9.5    11.0
SE  985.9  986.0  986.1  986.2  986.3  986.4  986.5  986.6  986.7  986.8
SQ     0      50     100    500    750   1000
SE  985.9  986.5  986.6  987.0  987.1  987.3
*
*
KKRKDKA1  ROUTE REACH
KM      ROUTE FLOW FROM KD TO KA (ALONG SPRR).
KM      TYPE C CHANNEL
RS     4      -1      0
RC  0.035   0.035   0.035   2000   0.0020   0.00
RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
RY     5.0     5.0    2.5     0.0     0.0     2.0     4.0     5.0
*
*
KK  RSKA1

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**Druango ADMP**  
**100-yr, 24-hour**

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KM	MODIFIED	PULS	ROUTING	BEHIND	117TH AVE	AND SPRR
* KO	1					
RS	1	STOR	0	0		
SV	27.8	34.8	42.6	61.0	77.2	89.1
SE	984.2	984.4	984.6	985.0	985.3	985.5
SQ	0.0	0.9	5.1	29.0	64.9	98.6
						101.5
						121.4
						156.7
						178.9
*						
KKDIKALA						
KM DIVERT	FLOW FROM KA2 TO SUBBASIN LA					
DT	DILA					
DI	166.1	239.3	364.4	532.6	749.5	
DQ	0	45.9	141.1	277.2	454.8	
*						
KKRKDKA2	ROUTE REACH					
KM	ROUTE FLOW FROM KA2 TO KA (ALONG SPRR).					
KM	TYPE C CHANNEL					
RS	10	-1	0			
RC	0.035	0.035	0.035	5000	0.0020	0.00
RX	0.0	20.0	35.0	50.0	50.1	250.0
RY	5.0	5.0	2.5	0.0	0.0	450.0
						550.0
*						
KK SUBKA	BASIN					
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN					
KM	L= 1.7 Lca= .9 S= 19.5 Kn= .050 LAG= 94.0					
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN					
BA	1.345					
LG	0.16	0.25	4.80	0.36	24	
UI	85	86	138	226	411	496
UI	729	663	596	642	520	463
UI	251	161	141	123	105	93
UI	48	49	29	10	11	11
UI	10	11	11	11	10	11
UI	11	0	0	0	0	0
UI	0	0	0	0	0	0
UI	0	0	0	0	0	0
UI	0	0	0	0	0	0
UI	0	0	0	0	0	0
*						
KK RETKA						
KM DIVERT	RETENTION OUT OF MODEL DUE TO COLDWATER RANCH DEVELOPMENT. -DCF					
KM TOTAL	RETENTION IS 17.6 AF. 80% OF THAT IS USED HERE. -DCF					
DT	RETKA 14.1					
DI	0 10000					
DQ	0 10000					
*						
KK CPKA3						
KM	RETURN DIVERT FROM RB.					
DR	DIKA3					
*						
KKRTDIKA	ROUTE REACH					
KM	ROUTE DIVERT FROM RA TO KA4					
KM	TYPE A CHANNEL					
RS	15	-1	0			
RC	0.100	0.100	0.100	5500	0.0050	0.00
RX	0.0	100.0	400.0	500.0	500.1	600.0
RY	5.0	4.0	1.0	0.0	0.0	1.0
						900.0
						1000.0
*						
KK CPKA4						
KM	RETURN DIVERT FROM RA.					
DR	DIKA4					
*						
KK CPKA						
KM	ADD HYDROGRAPHS AT KA					
HC	4					
*						
KKDIKAKB						
KM	DIVERT FLOW FROM KA TO KB					

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**Druango ADMP**  
**100-yr, 24-hour**

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DT	DIKB									
DI	0	350	420	490	560	630	679			
DQ	0	0	40	106	174	242	291			
* *****										
* *****										
* *****										
*										
KK	SUBEC	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L=	.9	Lca=	.5	S=	11.6	Kn=	.107	LAG=	72.3
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.042									
LG	0.50	0.25	4.70	0.47	0					
UI	2	3	3	4	8	11	14	14	17	18
UI	19	19	19	18	16	17	16	12	13	11
UI	8	8	7	7	5	5	3	3	3	3
UI	2	2	2	1	2	1	1	2	0	1
UI	0	0	0	1	0	0	0	1	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	CPEC									
KM	COMBINE FLOWS FROM EC INTO SALT RIVER									
KM	ROUTING CHANGE MADE TO MORE ACCURATELY MODEL WATERSHED -DCF 5.18.00									
HC	2									
*										
KK	SUBAD	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L=	1.1	Lca=	.5	S=	10.9	Kn=	.103	LAG=	74.5
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.437									
LG	0.49	0.26	5.20	0.37	0					
UI	24	24	29	50	82	125	143	148	180	198
UI	205	201	201	184	167	179	159	126	142	100
UI	92	75	69	76	45	43	38	32	30	25
UI	22	23	18	13	14	13	14	8	3	3
UI	4	3	3	3	3	3	3	3	3	3
UI	3	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	CPAD									
KM	COMBINE FLOWS FROM AD INTO SALT RIVER									
KM	ROUTING CHANGE MADE TO MORE ACCURATELY MODEL WATERSHED -DCF 5.18.00									
KM	BASED ON CONTOURS, AD WILL FLOW INTO THE RIVER BEFORE FLOWING WESTERLY									
HC	2									
*										
KK	SUBAC	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L=	1.1	Lca=	.6	S=	20.0	Kn=	.112	LAG=	75.9
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.456									
LG	0.44	0.25	5.40	0.35	3					
UI	28	27	41	66	121	161	153	212	215	231
UI	234	231	199	195	214	146	155	131	107	88
UI	78	82	53	47	42	34	32	25	26	21
UI	16	16	16	15	6	3	4	3	4	3
UI	3	4	3	4	3	3	4	3	4	3
UI	4	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	SUBAB	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L=	1.1	Lca=	.5	S=	12.3	Kn=	.100	LAG=	69.7
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.432									

**Druango ADMP**  
**100-yr, 24-hour**

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LG	0.41	0.12	5.70	0.31	5					
UI	27	27	42	70	125	158	160	202	227	225
UI	229	219	187	203	176	142	151	106	95	79
UI	84	55	48	43	33	33	25	24	22	15
UI	15	15	15	4	4	3	3	4	3	4
UI	3	3	4	3	3	4	3	4	3	3
UI	4	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	CPSR7									
KM		ADD HYDROGRAPHS AT SALT RIVER.								
HC	3									
*										
KK	SUBOE BASIN									
KM		THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN								
KM	L= 1.1	Lca= .6	S= 17.3	Kn= .073	LAG= 56.8					
KM		AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN								
BA	0.469									
LG	0.31	0.23	6.20	0.24	33					
UI	38	41	85	171	217	271	297	318	313	273
UI	278	230	211	160	128	107	97	65	56	47
UI	37	35	26	21	21	17	5	5	4	5
UI	5	4	5	5	5	4	5	5	5	4
UI	5	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	RETOE									
KM		DIVERT RETENTION OUT OF MODEL DUE TO WILLAMETTE IND. DEVELOPMENT. -DCF								
KM		TOTAL RETENTION IS 5.3 AF. 80% OF THAT IS USED HERE. -DCF								
DT	RETOE 4.2									
DI	0 10000									
DQ	0 10000									
*										
KK	CPOE1									
KM		RETURN DIVERT FROM PA.								
DR	DIOE									
*										
KK	RRTDIOE ROUTE REACH									
KM		ROUTE DIVERT FROM RI TO OE								
KM		TYPE B CHANNEL								
RS	7	-1	0							
RC	0.100	0.020	0.100	5000	0.0013	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										
KK	CPOE2									
KM		RETURN DIVERT FROM RH								
DR	DIOE2									
*										
KK	CPOE3									
KM		RETURN DIVERT FROM RI								
DR	DIOE3									
*										
KK	@CPOE									
KM		ADD HYDROGRAPHS AT OE								
HC	4 5.29									
*										
KK	DIOEOD									
KM		DIVERT 17% OF FLOW FROM OE2 TO OD								
DT	DIOD									
DI	0 25	50	75	100	150	200				
DQ	0 4	9	12	17	26	34				
*										
KK	ROUTEMF ROUTE REACH									
KM		ROUTE FLOW FROM OE TO MF.								
KM		TYPE B CHANNEL								

**Druango ADMP**  
**100-yr, 24-hour**

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RS      6          -1          0
RC 0.100  0.020    0.100    5200  0.0021    0.00
RX 0.0     470.0   476.0    480.0  520.0    524.0    530.0  1000.0
RY 4.7     0.0      0.0      1.0    1.0      0.0      0.0     4.7
*
KK SUBMF    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       1.4  Lca=       .7  S=       12.9  Kn=   .100  LAG=    87.9
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.971
LG 0.50    0.15    8.40    0.10      0
UI 40        41      41      54      86    116    177    221    244    224
UI 300      302    341    345    338    341    345    317    283    287
UI 311      283    217    217    244    171    154    149    123    114
UI 125      105     77     71     66     62     50     50     46     37
UI 38        37      34      23      23     23     24     22     23     11
UI 5         0       0       0       0      0      0      0      0      0
UI 0         0       0       0       0      0      0      0      0      0
UI 0         0       0       0       0      0      0      0      0      0
UI 0         0       0       0       0      0      0      0      0      0
*
KK CPMF
KM RETURN ROUTING DIVERT FROM MD (DIMFX).
DR DIMFX
*
*
KKRTMDMF    ROUTE    REACH
KM ROUTE FLOW FROM MD TO MF (ALONG LOWER BUCKEYE ROAD).
KM TYPE B CHANNEL
RS      7          -1          0
RC 0.100  0.020    0.100    5200  0.0015    0.00
RX 0.0     470.0   476.0    480.0  520.0    524.0    530.0  1000.0
RY 4.7     0.0      0.0      1.0    1.0      0.0      0.0     4.7
*
*
KK CPMF1
KM ADD HYDROGRAPHS AT MF
HC 3
*
KKDIMFEB
KM DIVERT 47% OF FLOW AT MF TO EB.
DT DIEB
DI 0     25      50      75     100    150    200
DQ 0     12      23      35     47     71     94
*
KKRTMFMC    ROUTE    REACH
KM ROUTE FLOW FROM MF TO MC (ALONG LOWER BUCKEYE ROAD).
KM TYPE B CHANNEL
RS      7          -1          0
RC 0.100  0.020    0.100    5200  0.0015    0.00
RX 0.0     470.0   476.0    480.0  520.0    524.0    530.0  1000.0
RY 4.7     0.0      0.0      1.0    1.0      0.0      0.0     4.7
*
KK SUBOD    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       1.1  Lca=       .6  S=       18.2  Kn=   .060  LAG=    58.3
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.509
LG 0.31    0.15    9.70    0.07      32
UI 41        44      94     184    236    294    323    344    340    297
UI 302      249    230    171    140    117    105     71     60     51
UI 40        38      28      23      23     19      5      5      6      5
UI 5         5       5       5       5      5      5      6      5      5
UI 5         0       0       0       0      0      0      0      0      0
UI 0         0       0       0       0      0      0      0      0      0
UI 0         0       0       0       0      0      0      0      0      0
*
KK RETOD

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**Druango ADMP**  
**100-yr, 24-hour**

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KM DIVERT RETENTION OUT OF MODEL DUE TO M.B.C.I. DEVELOPMENT. -DCF  
 KM TOTAL RETENTION IS 2.5 AF. 80% OF THAT IS USED HERE. -DCF

DT RETOD 2.0  
 DI 0 10000  
 DQ 0 10000  
 \*

KK DROD  
 KM RETURN DIVERT FROM OE.  
 DR DIOD  
 \*

KKRTDIOD ROUTE REACH  
 KM ROUTE DIVERT FROM OG1 TO OD  
 KM TYPE A CHANNEL

RS	4	-1	0					
RC	0.100	0.020	0.100	2700	0.0013	0.00		
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7

KM TYPE B CHANNEL

RS	9	-1	0					
RC	.1	.02	.1	5500	.0013			
RX	0	470	476	480	520	524	530	1000
RY	4.7	0	0	1	1	0	0	4.7

\*

KK DROD2  
 KM RETURN DIVERT FROM OG1  
 DR DIOD1  
 \*

KK DROD3  
 KM RETURN DIVERT FROM OG2.  
 DR DIOD2  
 \*

KK @CPOD  
 KM ADD HYDROGRAPHS AT OD.  
 HC 4 7.57  
 \*

KKDIODOC  
 KM DIVERT 18% OF FLOW FROM OD TO OC.

DT	DIODC	DI	25	50	75	100	150	200
DI	0	5	9	14	18	27	36	

\*

KKRTODMC ROUTE REACH  
 KM ROUTE FLOW FROM OD TO MC.  
 KM TYPE B CHANNEL

RS	6	-1	0					
RC	0.100	0.020	0.100	5200	0.0023	0.00		
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7

\*

KK SUBMC BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= 1.4 Lca= .7 S= 13.6 Kn= .094 LAG= 81.8  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.999

LG	0.47	0.15	8.80	0.09	5					
UI	45	45	45	72	94	152	231	275	236	299
UI	344	369	378	378	377	373	344	313	322	350
UI	259	235	265	213	173	170	133	125	142	106
UI	86	75	72	60	56	55	43	41	41	39
UI	25	25	26	25	26	23	6	6	5	6
UI	6	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KK@CPMC1  
 KM ADD HYDROGRAPHS AT MC  
 HC 3 10.04

**Druango ADMP**  
**100-yr, 24-hour**

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*
KKDIMCMB
KM      DIVERT 39% OF FLOW AT MC TO MB.
DT  DIMB
DI      0      25      50      75     100     150     200
DQ      0       8      20      29      39      59      78
*
KKRTMCIE   ROUTE    REACH
KM      ROUTE FLOW FROM MC TO IE (ALONG 99TH AVENUE).
KM      TYPE B CHANNEL
RS      2      -1      0
RC  0.100  0.020  0.100  2000  0.0030  0.00
RX  0.0    470.0  476.0  480.0  520.0  524.0  530.0  1000.0
RY  4.7    0.0    0.0    1.0    1.0    0.0    0.0    4.7
*
KK  DREB
KM RETURN DIVERT FROM MF TO EB
DR  DIEB
*
KK SUBEB   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      .5  Lca=      .3  S=     11.3  Kn=  .100  LAG=  42.8
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.139
LG  0.50  0.21  6.40  0.23      0
UI  12    15    30    61    70    90    100   101   92    86
UI  80    66    53    41    35    29    20    17    15    10
UI  11    7     7     6     2     2     1     2     1     2
UI  1     2     1     1     2     1     2     1     0     0
UI  0     0     0     0     0     0     0     0     0     0
*
KK SUBED   BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      1.2  Lca=      .6  S=     9.4  Kn=  .100  LAG=  84.3
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.483
LG  0.50  0.25  5.70  0.31      0
UI  21    22    21    32    45    67    103   129   113   133
UI  169   160   178   179   178   177   173   149   147   162
UI  148   111   117   122   85    82    73    62    61    67
UI  43    40    34    34    28    26    26    19    20    19
UI  18    12    12    12    12    12    13    3     2     3
UI  2     0     0     0     0     0     0     0     0     0
UI  0     0     0     0     0     0     0     0     0     0
UI  0     0     0     0     0     0     0     0     0     0
*
*
KK CPEB1
KM      ADD HYDROGRAPHS AT EB
HC      2
*
KK CPEB2
KM COMBINE FLOW FROM EB & ED WITH FLOW FROM MF DIVERSION
HC      2
*
*
KKRTEBIE
KM HEC-RAS REACH
KM BFC
KM ROUTE FLOW FROM EB TO IE.
KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
KM HEC-RAS MODEL. 06.07.00 -DCF
RS      9      STOR      0
SV      0      82    138.4    188.1    233    277.3    316.8    355    389.7    406.6
SQ      0      400    800    1200    1600    2000    2400    2800    3200    3400
*
* KM      TYPE B CHANNEL

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**Druango ADMP**  
**100-yr, 24-hour**

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* RS      3          -1          0
* RC 0.100  0.020  0.100   5280  0.0025    0.00
* RX     0.0    470.0  476.0   480.0   520.0   524.0   530.0   1000.0
* RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
*
KK SUBIE    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       .8  Lca=      .4  S=      6.0  Kn= .100  LAG=   68.6
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.302
LG  0.50    0.15    8.80    0.09      0
UI  16       16       18       34       50       82       96       93      126      122
UI  137     135     135     132     113     115     126     84      88      87
UI  63       59       47       47       46       31       27      26      20      20
UI  16       15       15       12       9        10       9        9       7       2
UI  2        2        2        2        2        2        2        2       2       2
UI  2        0        0        0        0        0        0        0       0       0
UI  0        0        0        0        0        0        0        0       0       0
UI  0        0        0        0        0        0        0        0       0       0
*
KK SUBID    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       1.0  Lca=      .4  S=      7.1  Kn= .092  LAG=   68.2
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.563
LG  0.49    0.25    6.00    0.24      1
UI  31       31       37       65      106      160      184      192      231      255
UI  265     258     259     237     215     231     206     161     182     131
UI  118     96      89      98      58       55       50       40      39      33
UI  28       28       24       17       18       18       18       11       4       4
UI  3        4        4        4        4        4        4        3       4       4
UI  4        0        0        0        0        0        0        0       0       0
UI  0        0        0        0        0        0        0        0       0       0
UI  0        0        0        0        0        0        0        0       0       0
*
KK CPIE1
KM ADD HYDROGRAPHS AT IE
HC  3
*
KK CPIE2
KM COMBINE FLOWS FROM ID & IE WITH FLOWS FROM MC
HC  2
*
KKRTIEIB
KM HEC-RAS REACH
KM BFC
KM ROUTE FLOW FROM IE TO IB.
KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
KM HEC-RAS MODEL. 06.07.00 -DCF
RS  5      STOR      0
SV  0      58.3    100.7   135.4    164    190.3    214    236.2    258.3    269.8
SQ  0      400     800     1200    1600    2000    2400    2800    3200    3400
*
* KM      TYPE B CHANNEL
* RS      8          -1          0
* RC 0.100  0.020  0.100   5000  0.0020    0.00
* RX     0.0    470.0  476.0   480.0   520.0   524.0   530.0   1000.0
* RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
*
KK SUBIB    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=       1.1  Lca=      .6  S=     14.2  Kn= .100  LAG=   73.6
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.479
LG  0.50    0.15    8.40    0.11      0
UI  24       24       23       48       64      105      139      130      155      178
UI  204     198     202     200     195     166     169     183     141     126

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**Druango ADMP**  
**100-yr, 24-hour**

UI	143	98	92	79	68	72	61	46	39	39
UI	30	30	26	21	22	21	14	14	13	14
UI	13	8	3	3	3	3	3	3	3	3
UI	2	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	SUBIC	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L=	1.1	Lca=	.5	S=	4.7	Kn=	.100	LAG=	86.2
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.515									
LG	0.50	0.25	5.30	0.34	0					
UI	22	22	22	32	47	66	101	128	125	129
UI	183	153	184	186	186	185	186	162	153	163
UI	168	127	116	127	111	88	83	69	65	64
UI	66	42	40	35	35	28	27	26	21	20
UI	20	19	12	12	13	12	13	12	4	3
UI	3	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	CPIB1									
KM	ADD HYDROGRAPHS AT IB.									
HC	3									
*										
KK	SUBOC	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L=	.8	Lca=	.4	S=	13.2	Kn=	.055	LAG=	29.9
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.310									
LG	0.20	0.15	9.70	0.07	59					
UI	41	93	221	295	346	317	294	225	156	122
UI	75	56	41	32	23	18	5	5	5	5
UI	5	5	5	5	6	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK	DROC									
KM	RETURN DIVERT FROM OD.									
DR	DIOC									
*										
KKRTDIOC	ROUTE	REACH								
KM	ROUTE DIVERT FROM OD TO OC									
KM	TYPE B CHANNEL									
RS	7	-1	0							
RC	0.100	0.020	0.100	4000	0.0010	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	0.0	4.7	
*										
KK	CPOC									
KM	ADD HYDROGRAPHS AT OC									
HC	2									
*										
KKRTOCMB	ROUTE	REACH								
KM	ROUTE FLOW FROM OC TO MB.									
KM	TYPE B CHANNEL									
RS	4	-1	0							
RC	0.100	0.020	0.100	5200	0.0038	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	0.0	4.7	
*										
KK	SUBMB	BASIN								
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L=	1.4	Lca=	.7	S=	17.6	Kn=	.100	LAG=	81.1
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.995									
LG	0.49	0.15	8.40	0.10	2					

**Druango ADMP  
100-yr, 24-hour**

UI	46	47	46	81	106	174	242	285	256	355
UI	342	390	390	392	387	377	328	324	348	309
UI	242	262	237	181	176	139	132	144	107	88
UI	75	76	58	57	54	42	43	42	33	26
UI	27	26	26	27	10	6	6	6	6	5
UI	6	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KK DRMB

KM RETURN DIVERT FROM MC.

DR DIMB

\*

KKRTDIMB ROUTE REACH

KM ROUTE DIVERT FROM MC TO MB

KM TYPE B CHANNEL

RS	6		-1	0						
RC	0.100	0.020	0.100	5200	0.0023	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		

\*

KK @CPMB

KM ADD HYDROGRAPHS AT MB.

HC 3 11.88

\*

KKRTMBIB ROUTE REACH

KM ROUTE FLOW FROM MB TO IB (ALONG 107TH AVENUE).

KM TYPE B CHANNEL

RS	3		-1	0						
RC	0.100	0.020	0.100	2600	0.0015	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		

\*

KK@CPIB2

KM COMBINE FLOW FROM IB & IC WITH FLOWS FROM MB

HC 2 14.35

\*

KKRTIBIA

KM HEC-RAS REACH

KM BFC

KM ROUTE FLOW FROM IB TO IA (ALONG 107TH AVENUE).

KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE  
KM HEC-RAS MODEL. 06.07.00 -DCF

RS	3	STOR	0							
SV	0	17	45.4	77	106	135.9	167.9	199.8	228.7	243
SQ	0	400	800	1200	1600	2000	2400	2800	3200	3400

\*

\* KM TYPE B CHANNEL

* RS	1		-1	0						
* RC	0.100	0.020	0.100	500	0.0120	0.00				
* RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
* RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		

\*

KK SUBME BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= 1.0 Lca= .4 S= 20.6 Kn= .090 LAG= 54.3

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.326

LG	0.42	0.26	4.70	0.44	5					
UI	23	24	46	85	138	134	177	200	197	198
UI	172	173	154	129	119	90	73	70	53	41
UI	35	29	25	22	20	13	13	14	8	3
UI	3	3	3	3	3	3	3	3	3	3
UI	3	3	3	3	3	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KKRTMEIA ROUTE REACH

**Druango ADMP**  
**100-yr, 24-hour**

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KM       ROUTE FLOW FROM ME TO IA (ALONG 107TH AVENUE).

KM       TYPE B CHANNEL

RS	3	-1	0						
RC	0.100	0.020	0.100	3400	0.0034	0.00			
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0	
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7	

\*

KK SUBIA   BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= .8 Lca= .4 S= 17.1 Kn= .085 LAG= 44.5

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.309

LG	0.38	0.25	6.00	0.25	6				
UI	27	35	72	146	160	209	226	231	204
UI	169	152	106	88	82	53	43	34	29
UI	19	15	16	10	3	3	4	3	4
UI	3	4	3	4	3	3	4	0	0
UI	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0

\*

KK CPIA

KM ADD HYDROGRAPHS AT IA.

HC 3

\*

KKRTIAHB

KM HEC-RAS REACH

KM BFC

KM ROUTE FLOW FROM IA TO HB.

KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE

KM HEC-RAS MODEL. 06.07.00 -DCF

RS	2	STOR	0						
SV	0	23.3	45.2	73	102.7	132.9	160.6	189.4	212.1
SQ	0	400	800	1200	1600	2000	2400	2800	3200

\*

\* KM       TYPE C CHANNEL

* RS	4	-1	0						
* RC	0.035	0.035	0.035	2600	0.0058	0.00			
* RX	0.0	20.0	35.0	50.0	50.1	250.0	450.0	550.0	
* RY	5.0	5.0	2.5	0.0	0.0	2.0	4.0	5.0	

\*

KK SUBHB   BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= .8 Lca= .4 S= 25.0 Kn= .090 LAG= 45.2

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.343

LG	0.39	0.25	4.80	0.41	5				
UI	31	40	84	174	184	246	256	263	223
UI	172	163	117	91	84	56	46	38	28
UI	18	17	17	4	4	4	4	3	4
UI	4	4	4	3	4	4	0	0	0
UI	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0

\*

KK CPHB1

KM ADD HYDROGRAPHS AT HB.

HC 2

\*

KK SUBLD   BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= .8 Lca= .4 S= 13.3 Kn= .052 LAG= 30.7

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.278

LG	0.16	0.26	4.80	0.37	29				
UI	36	84	198	265	310	285	263	202	139
UI	69	49	38	28	21	15	5	5	4
UI	4	5	4	5	5	0	0	0	0
UI	0	0	0	0	0	0	0	0	0

\*

**Druango ADMP**  
**100-yr, 24-hour**

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KK DRLD
KM RETURN DIVERT FROM LE TO LD
DR DILD
*
KKRTDILD ROUTE REACH
KM ROUTE DIVERT FROM LE TO LD
KM TYPE A CHANNEL
RS   4           -1          0
RC 0.025    0.025    0.025    2500  0.0016    0.00
RX 0.0      100.0    400.0    500.0  500.1    600.0    900.0  1000.0
RY 5.0      4.0      1.0      0.0      0.0      1.0      4.0      5.0
*
KK @CPLD
KM ADD HYDROGRAPHS AT LD.
HC   2      10.10
*
KKRTLDMA ROUTE REACH
KM ROUTE FLOW FROM LD TO MA
KM TYPE A CHANNEL
RS   3           -1          0
RC 0.025    0.025    0.025    2600  0.0035    0.00
RX 0.0      100.0    400.0    500.0  500.1    600.0    900.0  1000.0
RY 5.0      4.0      1.0      0.0      0.0      1.0      4.0      5.0
*
KK SUBMA BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L= .7 Lca= .3 S= 14.7 Kn= .100 LAG= 49.5
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.247
LG 0.50    0.25    4.55    0.52      0
UI 18       18       37       70     107     106     141     153     153     153
UI 129      133      111      103     81      66      53      54      35      30
UI 25        22       17       16      12      11      10      11      2       3
UI 2         2        2        3       2       2       2       3       2       2
UI 2         3        2        2       0       0       0       0       0       0
UI 0         0        0        0       0       0       0       0       0       0
*
KK CPMA
KM ADD HYDROGRAPHS AT MA
HC   2
*
KKRTMAHB ROUTE REACH
KM ROUTE FLOW FROM MA TO HB (ALONG 115TH AVENUE).
KM TYPE B CHANNEL
RS   2           -1          0
RC 0.100    0.020    0.100    4000  0.0071    0.00
RX 0.0      470.0    476.0    480.0  520.0    524.0    530.0  1000.0
RY 4.7      0.0      0.0      1.0      1.0      0.0      0.0      4.7
*
KK@CPHB2
KM ADD HYDROGRAPHS AT HB.
HC   2      15.98
*
KKRTHBDA
KM HEC-RAS REACH
KM BFC
KM ROUTE FLOW FROM HB TO DA (ALONG 115TH AVENUE).
KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
KM HEC-RAS MODEL. 06.07.00 -DCF
RS   2      STOR      0
SV   0      11.3     18.3     26.4     34.3     40.3     46.2     51.7     56.5     59.0
SQ   0      400       800     1200     1600     2000     2400     2800     3200     3400
*
* KM      TYPE B CHANNEL
* RS     2           -1          0
* RC 0.100    0.020    0.100    1200  0.0100    0.00
* RX 0.0      470.0    476.0    480.0  520.0    524.0    530.0  1000.0
* RY 4.7      0.0      0.0      1.0      1.0      0.0      0.0      4.7

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**Druango ADMP**  
**100-yr, 24-hour**

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*
KK SUBDA    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      1.0  Lca=     .6  S=    17.6  Kn= .076  LAG=   51.6
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.328
LG  0.39    0.17    6.80    0.18      6
UI   22      22      39      64      115     126     160     167     186     184
UI  185     154     162     145     117     116      87      73      62      62
UI   41      36      30      27      22      20      17      13      12      13
UI   11      2       3       3       3       2       3       3       3       3       2
UI    3      3       3       2       3       3       3       2       3       0
UI    0      0       0       0       0       0       0       0       0       0
*
*
KK CPDA
KM      ADD HYDROGRAPHS AT DA.
HC      2
*
*
KKRTDACC
KM HEC-RAS REACH
KM BFC
KM ROUTE FLOW FROM DA TO CC.
KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
KM HEC-RAS MODEL. 06.07.00 -DCF
RS    5      STOR      0
SV    0      49.6     80.6    107.1    129.8    149.2     167    184.1    200.2    207.6
SQ    0      400      800     1200     1600     2000     2400    2800     3200     3400
*
* KM      TYPE B CHANNEL
* RS    9      -1      0
* RC  0.100    0.020    0.100    5400    0.0006    0.00
* RX   0.0     550.0    626.0    630.0    670.0    674.0    680.0   1050.0
* RY   5.5     0.0      0.0      1.0      1.0      0.0      0.0      5.5
*
KK SUBCC    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      1.4  Lca=     .7  S=    22.8  Kn= .084  LAG=   56.3
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.981
LG  0.38    0.24    6.20    0.21      6
UI   61      62      96      157     285     360     361     460     513     514
UI  518     497     428     459     399     322     346     239     216     180
UI  188     127     107      98      75      76      55      56      49      35
UI   35      35      35       8       8       8       7       8       8       7
UI    8      8       7       8       8       7       8       8       7       8
UI    8      0       0       0       0       0       0       0       0       0
UI    0      0       0       0       0       0       0       0       0       0
*
KK CPCC1
KM COMBINE FLOW FROM SUBCC WITH FLOWS FROM DA
HC      2
*
KK SUBEE    BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      1.6  Lca=     1.0  S=    16.0  Kn= .076  LAG=   78.2
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.958
LG  0.48    0.25    4.90    0.34      1
UI   35      36      36      35      69      75     117     168     192     220
UI  188     243     287     271     297     300     301     300     297     293
UI  249     248     263     270     226     188     193     215     159     138
UI  135     116     104     100     113     89      68      65      57      57
UI   48      44      44      39      33      32      33      32      22      20
UI   20      0       0       0       0       0       0       0       0       0
UI    0      0       0       0       0       0       0       0       0       0

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**Druango ADMP**  
**100-yr, 24-hour**

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UI 0 0 0 0 0 0 0 0 0 0 0 0

UI 0 0 0 0 0 0 0 0 0 0 0 0

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KK CPEE1

KM RETURN DIVERT FROM JB

DR DIEE

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\*

\*

KKRTDIEE ROUTE REACH

KM ROUTE DIVERT FROM JB TO EE

KM TYPE A CHANNEL

RS	10	-1	0					
RC	0.100	0.020	0.100	7500	0.0015	0.00		
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0

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KK CPEC

KM ADD HYDROGRAPHS AT EC

HC 2

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KKRTEEEA

KM HEC-RAS REACH

KM BFC

KM ROUTE FLOW FROM EE TO EA.

KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE

KM HEC-RAS BFC TRIBUTARY MODEL. 05.23.01 -JEP

RS	15	STOR	0							
SV	0	63.2	84.9	119	148.6	174.2	197.9	220.2	241.2	263.1
SQ	0	100	200	400	600	800	1000	1200	1400	1600

\*

\* KKRTEEEA ROUTE REACH

\* KM ROUTE FLOW FROM EE TO EA

\* KM TYPE A CHANNEL

RS	8	-1	0					
* RC	0.035	0.035	0.035	5300	0.0030	0.00		
* RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0
* RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0

\*

\*

KK SUBEA BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= 1.5 Lca= .8 S= 21.3 Kn= .098 LAG= 86.9

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 1.321

LG	0.50	0.25	5.30	0.34	0					
UI	55	55	54	70	116	151	231	288	339	287
UI	386	419	456	461	458	460	464	442	382	386
UI	415	405	291	284	326	260	213	207	171	157
UI	160	168	104	102	89	87	71	68	67	53
UI	50	50	50	36	31	31	31	31	31	27
UI	7	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

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KK CPEA

KM ADD HYDROGRAPHS AT EA

HC 2

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*
KKRTEADC
KM HEC-RAS REACH
KM BFC
KM ROUTE FLOW FROM EA TO DC.
KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
KM HEC-RAS BFC TRIBUTARY MODEL. 05.23.01 -JEP
RS   14      STOR      0
SV    0      29.2      47.1      74.7      97.3     116.4     133.6     149.5     164.6     178.5
SQ    0      100       200      400       600      800      1000      1200      1400      1600
*
* KKRTEADC  ROUTE  REACH
* KM      TYPE B CHANNEL
* RS      6      -1      0
* RC  0.100  0.020  0.100  5000  0.0013  0.00
* RX    0.0    470.0  476.0  480.0  520.0  524.0  530.0  1000.0
* RY    4.7    0.0    0.0    1.0    1.0    0.0    0.0    4.7
*
*
KK SUBDC  BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      1.4  Lca=      .4  S=      22.1  Kn= .095  LAG=   63.7
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.830
LG  0.48    0.25    6.00    0.27      1
UI   48      48      64      101     192      270      262      335      366      401
UI   405     401     385     337     355      335      254      274      213      185
UI   151     135     148      90      82       77       59       59       47       43
UI   43      29      28      27      27       24       6        6        6        6
UI    6      6       6       6       6        5        6        6        6        6
UI    6      0       0       0       0        0        0        0        0        0
UI    0      0       0       0       0        0        0        0        0        0
*
KK CPDC
KM      ADD HYDROGRAPHS AT DC
HC    2
*
KKRTDCCC
KM HEC-RAS REACH
KM BFC
KM ROUTE FLOW FROM DC TO CC.
KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
KM HEC-RAS BFC TRIBUTARY MODEL. 05.23.01 -JEP
RS   13      STOR      0
SV    0      15.3     27.2     48.2     65.9     81.8     97.1     111.8     124     136.7
SQ    0      100      200      400      600      800      1000      1200      1400      1600
*
* KKRTDCCC  ROUTE  REACH
* KM      ROUTE FLOW FROM DC TO CC.
* KM      TYPE B CHANNEL
* RS      6      -1      0
* RC  0.100  0.020  0.100  5200  0.0015  0.00
* RX    0.0    470.0  476.0  480.0  520.0  524.0  530.0  1000.0
* RY    4.7    0.0    0.0    1.0    1.0    0.0    0.0    4.7
*
KK SUBDD  BASIN
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM L=      .5  Lca=      .3  S=      28.3  Kn= .100  LAG=   36.4
KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA 0.133
LG  0.50    0.25    4.65    0.43      0
UI   14      21      51      76      102      114      113      100      99      73
UI   62      45      39      25      20       16       13       10        7       8
UI    2      2       2       2       1        2        2        2        1       2
UI    2      2       0       0       0        0        0        0        0       0
UI    0      0       0       0       0        0        0        0        0       0
*
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**Druango ADMP**  
**100-yr, 24-hour**

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KKRTDDCC ROUTE REACH

KM ROUTE FLOW FROM DD TO CC.

KM TYPE A CHANNEL

RS	ROUTE	REACH	FLOW	FROM	DD	TO	CC.
RC	0.035	0.035	0.035	5000	0.0040	0.00	
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0 1000.0
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0 5.0

\*

KK CPCC2

KM ADD HYDROGRAPHS AT CC

HC 3

\*

KKRTCCCB

KM HEC-RAS REACH

KM BFC

KM ROUTE FLOW FROM CC TO CB.

KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE  
KM HEC-RAS MODEL. 06.07.00 -DCF

RS	ROUTE	REACH	STOR	0						
SV	0	38.4	74.7	138.7	197.6	254	306.8	354	397	420.1
SQ	0	400	800	1200	1600	2000	2400	2800	3200	3400

\*

\* KM TYPE B CHANNEL

RS	ROUTE	REACH	-1	0				
RC	0.100	0.020	0.100	5700	0.0018	0.00		
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7

\*

KK SUBCB BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= 1.2 Lca= .5 S= 11.1 Kn= .097 LAG= 71.6

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.739

LG	0.50	0.15	9.70	0.07	0					
UI	37	37	36	73	100	161	215	202	237	275
UI	314	307	310	310	300	257	260	283	216	195
UI	221	152	141	122	105	112	94	70	61	59
UI	46	46	40	34	34	33	21	21	20	21
UI	21	12	4	5	4	5	5	4	5	5
UI	4	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KK CPCB1

KM COMBINE FLOWS IN BFC WITH FLOWS FROM CB

HC 2

\*

KK SUBLB BASIN

KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

KM L= .7 Lca= .3 S= 8.8 Kn= .100 LAG= 54.6

KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN

BA 0.249

LG	0.50	0.25	4.60	0.49	0					
UI	17	17	29	49	87	96	121	127	141	139
UI	141	117	123	110	88	89	66	55	47	48
UI	31	27	23	21	16	15	14	9	10	9
UI	8	2	3	2	2	2	2	2	2	2
UI	2	2	2	2	2	2	2	2	2	0
UI	0	0	0	0	0	0	0	0	0	0

\*

KKRTLBHA ROUTE REACH

KM ROUTE FLOW FROM LB TO HA (SHEET FLOW).

KM TYPE A CHANNEL

RS	ROUTE	REACH	-1	0			
RC	0.100	0.100	0.100	4000	0.0065	0.00	
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0 1000.0
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0 5.0

\*

**Druango ADMP**  
**100-yr, 24-hour**

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KK SUBHA BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= .8 Lca= .4 S= 33.8 Kn= .091 LAG= 42.7  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.150  
 LG 0.46 0.25 4.70 0.44 5  
 UI 13 17 35 71 77 102 110 112 99 95  
 UI 82 74 51 43 39 26 22 16 14 12  
 UI 9 8 7 5 2 1 2 2 1 2  
 UI 2 1 2 2 2 1 2 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*  
 KK CPHA  
 KM ADD HYDROGRAPHS AT HA  
 HC 2  
 \*  
 KKRTHAGD ROUTE REACH  
 KM ROUTE FLOW FROM HA TO GD (SHEET FLOW).  
 KM TYPE A CHANNEL  
 RS 15 -1 0  
 RC 0.100 0.100 0.100 4800 0.0029 0.00  
 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0  
 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0  
 \*  
 KK SUBKC BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= .8 Lca= .4 S= 26.3 Kn= .100 LAG= 50.1  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.264  
 LG 0.50 0.25 4.60 0.50 0  
 UI 19 20 39 75 113 115 151 163 164 163  
 UI 138 142 118 111 86 70 57 59 37 32  
 UI 26 24 18 18 13 11 11 11 2 3  
 UI 2 3 2 2 3 2 2 3 2 3  
 UI 2 2 3 2 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*  
 KK RTKCGD ROUTE REACH  
 KM ROUTE FLOW FROM KC TO GD (ALONG EL MIRAGE RD).  
 KM ASSUME NEGLIGIBLE CHANNEL TRANSMISSION LOSS.  
 KM TYPE B CHANNEL  
 RS 4 -1 0  
 RC 0.100 0.020 0.100 5200 0.0043 0.00  
 RX 0.0 470.0 476.0 480.0 520.0 524.0 530.0 1000.0  
 RY 4.7 0.0 0.0 1.0 1.0 0.0 0.0 4.7  
 \*  
 KK SUBGD BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= 1.1 Lca= .6 S= 33.3 Kn= .093 LAG= 58.4  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.838  
 LG 0.49 0.15 7.00 0.17 0  
 UI 48 49 65 102 193 273 265 338 369 405  
 UI 409 404 390 340 358 338 257 276 216 186  
 UI 153 136 150 90 83 78 60 59 47 44  
 UI 44 30 27 27 28 24 6 6 6 6  
 UI 6 6 6 6 6 6 6 6 6 6  
 UI 6 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*  
 KK SUBGC BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= .8 Lca= .4 S= 26.5 Kn= .053 LAG= 27.4  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.215  
 LG 0.24 0.26 4.70 0.34 16  
 UI 28 65 153 205 240 220 204 156 107 85  
 UI 52 39 28 22 17 12 4 3 4 3

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**Druango ADMP**  
**100-yr, 24-hour**

UI	4	3	4	3	4	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KKRTGCGD	ROUTE	REACH								
KM	ROUTE FLOW FROM GC TO GD (ALONG EL MIRAGE ROAD).									
KM	TYPE B CHANNEL									
RS	3	-1	0							
RC	0.100	0.020	0.100	2400	0.0017	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										
KK	CPGD									
KM	ADD HYDROGRAPHS AT GD.									
HC	4									
*										
KKRTGDCB	ROUTE	REACH								
KM	ROUTE FLOW FROM GD TO CB (EL MIRAGE ROAD).									
KM	TYPE B CHANNEL									
RS	3	-1	0							
RC	0.100	0.020	0.100	2000	0.0010	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										
KK	CPCB									
KM	ADD HYDROGRAPHS AT CB									
HC	2									
*										
KKRTCBCA										
KM	HEC-RAS REACH									
KM	BFC									
KM	ROUTE FLOW FROM CB TO CA.									
KM	ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE									
KM	HEC-RAS MODEL. 06.07.00 -DCF									
RS	6	STOR	0							
SV	0	25.1	88.1	161.3	218.7	266.5	308.8	352.2	392	414.2
SQ	0	400	800	1200	1600	2000	2400	2800	3200	3400
*										
* KM	TYPE B CHANNEL									
* RS	9	-1	0							
* RC	0.100	0.020	0.100	5400	0.0007	0.00				
* RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
* RY	6.0	0.0	0.0	1.0	1.0	0.0	0.0	6.0		
*										
KK SUBCA	BASIN									
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L= 1.4 Lca= .6 S= 6.4 Kn= .098 LAG= 91.0									
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									
BA	0.984									
LG	0.50	0.15	8.80	0.09	0					
UI	39	39	39	42	83	94	143	207	243	204
UI	246	320	274	329	328	326	330	328	303	276
UI	272	298	291	204	203	232	194	154	150	129
UI	114	110	124	90	75	66	63	60	48	48
UI	48	35	36	35	36	25	22	22	22	23
UI	22	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK CPCA1										
KM	COMBINE FLOWS IN BFC WITH FLOWS FROM CA									
HC	2									
*										
KK SUBGB	BASIN									
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
KM	L= .8 Lca= .6 S= 36.1 Kn= .056 LAG= 30.7									
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN									

**Druango ADMP**  
**100-yr, 24-hour**

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BA 0.221  
 LG 0.23 0.25 4.55 0.42 17  
 UI 25 45 122 157 209 212 192 186 139 105  
 UI 77 63 43 32 23 19 15 13 3 4  
 UI 3 3 3 3 3 4 3 3 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*  
 KKRTGBCA ROUTE REACH  
 KM ROUTE FLOW FROM GB TO CA.  
 KM TYPE B CHANNEL  
 RS 5 -1 0  
 RC 0.100 0.020 0.100 4500 0.0021 0.00  
 RX 0.0 470.0 476.0 480.0 520.0 524.0 530.0 1000.0  
 RY 4.7 0.0 0.0 1.0 1.0 0.0 0.0 4.7  
 \*  
 KK CPCCA  
 KM ADD HYDROGRAPHS AT CA  
 HC 2  
 \*  
 KKRTCABC  
 KM HEC-RAS REACH  
 KM BFC  
 KM ROUTE FLOW FROM CA TO BC.  
 KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE  
 KM HEC-RAS MODEL. 06.07.00 -DCF  
 RS 9 STOR 0  
 SV 0 52.4 113.5 174.4 227.6 278.6 321.5 363 401.7 423  
 SQ 0 400 800 1200 1600 2000 2400 2800 3200 3400  
 \*  
 \* KM TYPE A CHANNEL  
 \* RS 4 -1 0  
 \* RC 0.100 0.100 0.100 2400 0.0033 0.00  
 \* RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0  
 \* RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0  
 \*  
 KK SUBBC BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= 1.7 Lca= .8 S= 11.5 Kn= .099 LAG= 99.7  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.630  
 LG 0.42 0.26 5.00 0.40 9  
 UI 28 28 27 42 58 89 134 167 149 172  
 UI 221 209 231 235 231 231 227 192 194 211  
 UI 193 144 152 160 112 107 95 80 79 89  
 UI 55 53 44 44 36 34 34 25 26 25  
 UI 24 15 16 16 15 16 15 4 4 3  
 UI 4 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*  
 KK CPBC  
 KM ADD HYDROGRAPHS AT BC  
 HC 2  
 \*  
 KK SUBBB BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= 1.0 Lca= .5 S= 7.8 Kn= .083 LAG= 62.2  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.245  
 LG 0.47 0.18 7.60 0.13 0  
 UI 14 14 18 29 53 76 79 90 109 115  
 UI 118 117 117 97 98 108 74 76 71 55  
 UI 47 40 43 31 26 22 19 17 15 13  
 UI 12 11 8 8 8 4 2 2 1  
 UI 2 2 1 2 2 1 2 2 2 2

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**Druango ADMP**  
**100-yr, 24-hour**

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UI	1	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0	0
*											
KKRTBBBA											
KM	ROUTE FLOW FROM BB TO BA (ALONG SOUTHERN AVENUE).										
KM	TYPE B CHANNEL										
RS	9	-1	0								
RC	.1	.02	.1	5200	.0023						
RX	0	470	476	480	520	524	530	1000			
RY	4.7	0	0	1	1	0	0	4.7			
*											
KK SUBBA BASIN											
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN										
KM	L=	1.5	Lca=	.7	S=	8.1	Kn=	.082	LAG=	82.1	
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN										
BA	0.345										
LG	0.36	0.10	5.00	0.37	7						
UI	17	17	17	34	47	76	100	94	111	128	
UI	147	143	145	144	140	120	122	132	101	91	
UI	103	71	66	56	50	52	44	33	28	28	
UI	21	21	19	16	16	15	10	10	9	10	
UI	10	5	2	3	2	2	2	2	2	3	
UI	2	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
*											
KK CPBA											
KM	ADD HYDROGRAPHS AT BA										
HC	3										
*											
KKRTBAAA ROUTE REACH											
KM	ROUTE FLOW FROM BA TO AA.										
KM	TYPE A CHANNEL										
RS	11	-1	0								
RC	0.100	0.100	0.100	2000	0.0013	0.00					
RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0			
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0			
*											
KK SUBAA BASIN											
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN										
KM	L=	1.9	Lca=	1.3	S=	9.0	Kn=	.099	LAG=	130.0	
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN										
BA	0.487										
LG	0.47	0.07	4.70	0.44	2						
UI	14	15	14	14	14	27	30	36	49	70	
UI	75	95	75	75	101	126	91	121	118	122	
UI	121	120	122	120	121	101	100	100	106	109	
UI	105	76	76	76	87	74	59	55	55	48	
UI	44	41	40	46	42	27	28	25	23	24	
UI	21	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
UI	0	0	0	0	0	0	0	0	0	0	
*											
KK CPAA											
KM	ADD HYDROGRAPHS AT AA.										
HC	2										
*											
KK SUBLC BASIN											
KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN										
KM	L=	.3	Lca=	.2	S=	6.7	Kn=	.098	LAG=	33.8	
KM	AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN										
BA	0.120										

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**Druango ADMP**  
**100-yr, 24-hour**

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LG	0.15	0.25	4.80	0.44	47					
UI	52	202	256	199	108	51	28	16	3	4
UI	4	4	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK RETLC										
KM DIVERT RETENTION OUT OF MODEL DUE TO FIELDCREST DEVELOPMENT. -DCF										
KM TOTAL RETENTION IS 16.3 AF. 80% OF THAT IS USED HERE. -DCF										
DT	RETL	13.0								
DI	0	10000								
DQ	0	10000								
*										
KKRTLCLA ROUTE REACH										
KM ROUTE FLOW FROM LC TO LA.										
KM TYPE B CHANNEL										
RS	4	-1	0							
RC	0.100	0.020	0.100	5000	0.0044	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										
KK SUBLA BASIN										
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN										
KM	L=	1.1	Lca=	.6	S=	12.3	Kn=	.096	LAG=	72.8
KM AGRICULTURAL S-GRAFH WAS USED FOR THIS BASIN										
BA	0.515									
LG	0.30	0.25	4.70	0.42	20					
UI	37	38	72	134	219	212	279	315	312	311
UI	274	273	243	203	189	142	115	111	83	64
UI	56	46	40	34	31	21	21	21	14	5
UI	4	5	5	4	5	5	4	5	5	4
UI	5	5	4	5	5	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0	0	0	0
*										
KK RETLA										
KM DIVERT RETENTION OUT OF MODEL DUE TO CAMBRIDGE ESTATES DEVELOPMENT. -DCF										
KM TOTAL RETENTION IS 31.3 AF. 80% OF THAT IS USED HERE. -DCF										
DT	RETL	25.1								
DI	0	10000								
DQ	0	10000								
*										
KKDRDILA										
KM RETURN DIVERT FROM LA										
DR	DILA									
*										
KKRTDILA ROUTE REACH										
KM ROUTE DIVERT FROM KA TO LA										
KM TYPE A CHANNEL										
RS	7	-1	0							
RC	0.025	0.025	0.025	4000	0.0016	0.00				
RX	0.0	100.0	400.0	500.0	500.1	524.0	900.0	1000.0		
RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0		
*										
KK @CPLA										
KM ADD HYDROGRAPHS AT LA										
HC	3	11.43								
*										
KKRTLAKB ROUTE REACH										
KM ROUTE FLOW FROM LA TO KB.										
KM TYPE B CHANNEL										
RS	2	-1	0							
RC	0.100	0.020	0.100	3500	0.0071	0.00				
RX	0.0	470.0	476.0	480.0	520.0	524.0	530.0	1000.0		
RY	4.7	0.0	0.0	1.0	1.0	0.0	0.0	4.7		
*										

**Druango ADMP**  
**100-yr, 24-hour**

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KK SUBKB BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= .9 Lca= .3 S= 23.2 Kn= .095 LAG= 46.7  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.420  
 LG 0.40 0.27 5.00 0.36 7  
 UI 43 66 162 241 321 360 359 316 312 230  
 UI 196 140 125 79 62 51 40 31 25 24  
 UI 9 5 5 6 5 5 6 5 6 5  
 UI 5 6 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*

KK DRKB  
 KM RETURN DIVERT FROM KA.  
 DR DIKB  
 \*

KKRTDIKB ROUTE REACH  
 KM ROUTE DIVERT FROM KA TO KB  
 KM TYPE A CHANNEL  
 RS 13 -1 0  
 RC 0.100 0.100 0.100 3500 0.0050 0.00  
 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0  
 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0  
 \*

KK @CPKB  
 KM ADD HYDROGRAPHS AT KB.  
 HC 3 13.20  
 \*

KK SUBGA BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= .6 Lca= .3 S= 52.6 Kn= .035 LAG= 11.7  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.139  
 LG 0.27 0.29 4.55 0.37 8  
 UI 89 307 325 187 89 40 19 6 5 5  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*

KKSUBWT1 BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= .9 Lca= .5 S= 11.6 Kn= .107 LAG= 72.3  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.582  
 LG 0.10 0.25 5.20 0.36 55  
 UI 113 428 641 1071 920 613 368 169 96 30  
 UI 30 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 \*

KKSUBWT2 BASIN  
 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN  
 KM L= .9 Lca= .5 S= 11.6 Kn= .107 LAG= 72.3  
 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN  
 BA 0.139  
 LG 0.10 0.25 5.10 0.37 55  
 UI 88 265 404 215 69 21 12 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0  
 UI 0 0 0 0 0 0 0 0 0 0

\*  
KK DUR  
KM COMBINE ALL FLOWS FO DURANGO WATERSHED  
HC 4  
\*  
\*  
\* \*\*\*\*\*  
\* \*\*\*\*\*  
\* \*\*\*\*\*  
\* changes made to file by Dibble & Associates  
\*  
\* 01.04.00 Revised routing from SUBED to SUBDA along Buckeye  
\* Feeder Canal. -DCF  
\*  
\* 03.15.00 Revised stage-discharge data from 69th Ave. to 35th Ave.  
\* along the Southern Pacific Railroad based upon survey data. -FEB  
\*  
\* 04.27.00 Revised HEC1 to account for on-site retention based on  
\* development at date of aerial photo (2.15.00). -DCF  
\* 80% OF THE TOTAL RETENTION VOLUMES WAS USED.  
\* SUB-BASINS MODIFIED INCLUDE;  
\* JC,OD,KA,PF,RF,OE,LA,LC,JE,MD,MG  
\*  
\* 05.04.00 Revised DQ records from 69th Ave. to 35th Ave. along the  
\* Southern Pacific Railroad based upon survey data.-JEP  
\*  
\* 05.04.00 Added storage behind Holly Acres levee -DCF  
\*  
\* 05.11.00 Modified Channel routing N values and section geometry to match  
\* approved values and natural conditions. - JEP  
\*  
\* 05.17.00 Removed Reservoir routing records, leaving only storage routing  
\* records for basins XA, WC, WA, VC, VA, UC, UB. - JEP  
\*  
\* 05.22.00 Revised channel routing method from normal depth storage to  
\* modified puls routing for reaches RTWCWA, RTWAVC, RTVCVA,  
\* RTVAUC, RTUCUB along SPRR. - JEP  
\*  
\* 05.24.00 Revised number of routing steps based upon most current average  
\* channel velocities for reaches RTWCWA, RTWAVC, RTVCVA, RTVAUC,  
\* RTUCUB along SPRR. - JEP  
\*  
\* 06.02.00 Added new sub-basins JH,JG,JI,MH,MI and re-delineated basins  
\* JF,MD,MG. UPDATED LANDUSE AND AREAS USING DDMSW. -DCF  
\*  
\* 06.06.00 Checked and revised as required route lengths for entire model  
-DCF  
\*  
\* 06.07.00 Revised routing to use HEC-RAS discharge-storage data for the  
\* BFC reaches RTEBIE,RTIEIB,RTIBIA,RTIAHB,RTHBDA,RTDACC,RTCCCB,  
\* RTCBCA,RTCACB. -DCF  
\*  
\* 06.15.00 Added additional combine records for purposes of future channel  
\* design and floodplain delineation at basins WA,VC,VA,UC and  
\* IE,IB,HB,CC,CB,CA. Coded in relevant drainage area at areas  
\* where diverted flows are being combined -JEP  
\*  
\* 06.21.00 Revised routing sequence at UC to code in new divert over  
SPRR -DCF  
\*  
\* 06.21.00 Revised number of routing steps based upon most current average  
\* reach velocities for reaches RTWCWA, RTWAVC, RTVCVA, RTVAUC,  
\* RTUCUB along SPRR, and reaches RTEBIE,RTIEIB,RTIBIA,RTIAHB,  
\* RTHBDA,RTDACC,RTCCCB,RTCBCA,RTCACB along BFC. - JEP  
\*  
\* 06.21.00 Revised routing to use HEC-2 discharge-storage data for the  
\* SPRR reaches RTWCWA, RTVCWA, RTDIVA, RTVAUC. - JEP

**Druango ADMP**  
**100-yr, 24-hour**

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\* 06.21.00 Revised DQ records to use HEC-2 split flow data for the SPRR reaches RTWCWA (DIQE), RTWAVC (DIVA) RTDIVA (DIUC), RTVAUC (DIUCUB). - JEP  
\*  
\* 06.28.00 Revised routing sequence at BA -DCF  
\*  
\* 09.20.00 Revised S-graph to use Valley for the following subbasins; WD, WB, WC, WA, XA, VD, VB, VC, VA, UA, UC, UD, PC, PD, PE, PF, QA, JH, JI, QB, QD, QC, QE. -DCF  
\*  
\* 09.20.00 Revised NSTPS per FCD comments -DCF  
\*  
\* 09.29.00 Added comment records referencing appropriate HEC-2 file names for stage storage values; Modified stage storage values based on most current HEC-2 split flow results. Records RTWCWA, RTWAVC, RTDIVA, RTVAUC. -JEP  
\*  
\* 10.31.00 Model methodology and structure approved to date by FCD  
\*  
\* 11.13.00 Revisions to combine areas made with considerations given to flow quantities in diverts -DCF  
\*  
\* 03.05.01 Revised sub-basins at 91st Ave WWTP to model the condition where the WWTP does not contribute run-off -DCF  
\*  
\* 05.23.01 Revised routing to use HEC-RAS discharge-storage data for the BFC TRIBUTARY reaches RTEEEA,RTEADC,RTDCCC - JEP  
\*  
\* Wednesday, 23 May, 2001

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**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
55	SUBWD	
	V	
	V	
64	RTWDXA	
.	.	
71	.	SUBXA
.	.	.
79	CPXA1.....	
.	.	
84	----->	DIZZ1
82	DIXAO	
	V	
	V	
87	RTXAWC	
.	.	
94	.	SUBWB
.	V	
.	V	
103	RTWBWC	
.	.	
110	.	SUBWC
.	.	.
119	CPWC.....	
.	.	
125	----->	DIQE
122	DIWCWA	
	V	
	V	
128	RTWCWA	
.	.	
142	.	SUBWA
.	.	.
149	CPWA1.....	
.	.	
152	.	SUBVD
.	V	
.	V	
161	RTVDWA	
.	.	
168	CPWA2.....	
.	.	
175	----->	DIQD
171	DIWAVC	
	V	
	V	
178	RTWAVC	
.	.	
189	.	SUBVC
.	.	
197	CPVC1.....	
.	.	
200	.	SUBVB
.	V	
.	V	
210	RTVBVC	
.	.	

**SCHEMATIC DIAGRAM OF STREAM NETWORK  
INPUT**

LINE	(V) ROUTING	(--->) DIVERSION OR PUMP FLOW
NO.	(.) CONNECTOR	(<---) RETURN OF DIVERTED OR PUMPED FLOW
217	CPVC2.....	
	.	
224	-----> DIVA	
220	DIVCQA	
	V	
	V	
227	RTVCQA	
	.	
234	.	SUBQA
	.	
244	CPQA2.....	
	V	
	V	
247	RSQA	
	.	
256	-----> DIPF	
254	DIQAPF	
	V	
	V	
259	RTQAJH	
	.	
266	.	SUBQE
	.	
277	.	.
275	.	DRQE <----- DIQE
	.	V
	.	V
278	.	RTDIQE
	.	
285	CPQE.....	
	V	
	V	
288	RSQE	
	V	
	V	
294	RTQEQC	
	.	
301	.	SUBQD
	.	
310	.	.
308	.	DRQD <----- DIQD
	.	V
	.	V
311	.	RTDIQD
	.	
318	CPQD.....	
	V	
	V	
321	RSQD	
	.	
329	.	-----> DIQB
327	DIQDQB	
	V	
	V	
332	RTQDQC	
	.	
339	.	SUBQC
	.	
348	CPQC.....	

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
.	.	.
353	.	-----> DISR
351	DIQCR	
	V	
	V	
356	RTQCJI	
.	.	.
363	.	SUBQB
.	.	.
374	.	.
372	.	. <----- DIQB
	DRQB	
	V	
	V	
375	.	RTDIQB
.	.	.
381	.	CPQB.....
.	CPQB	
	V	
	V	
384	.	RSQB
.	RSQB	
	V	
	V	
391	.	RTQBJH
.	.	.
398	.	SUBJH
.	.	.
406	CPJH.....	
	V	
	V	
408	RTJHJI	
.	.	.
415	.	SUBJI
.	.	.
422	CPJI.....	
.	.	.
427	----->	DISR1
425	DISRX	
.	.	.
430	.	SUBPF
.	.	.
442	----->	RETPF
438	RETPF	
.	.	.
447	.	. <----- DIPF
445	.	DRPF
	V	
	V	
448	.	RTDIPF
.	.	.
455	@CPPF.....	
.	CPPF	
	V	
	V	
458	RSPF	
.	.	.
466	----->	DIPE
464	DIPFPE	
	V	
	V	
469	RTPFJF	
.	.	.

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
476	.	SUBUD
488	.	.
486	.	-----> DIUUA
491	.	DIUDUA V V RTUDVA
498	.	SUBVA
508	.	.
506	.	DRVA V V
509	.	RTDIVA
519	.	CPVA1.....
522	.	CPVA2.....
532	.	.
525	.	-----> DIUC DIVAPE
535	.	SUBPE
545	.	.
543	.	DRPE V V
546	.	RTDipe
553	.	CPPE.....
556	.	V V RSPE
564	.	.
562	.	-----> DIPD DIPEPD V V
567	.	RTPEJF
574	.	SUBJF
584	.	CPJF.....
587	.	V V RTJFJG
594	.	SUBJG
604	.	CPJG.....
607	CPJGSR.....	.
611	.	-----> DISR2

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
609	DISRX	
616	.	<----- DIUC
614	DRUC	
	V	
	V	
617	RTVAUC	
629	.	SUBUC
637	.	@CPUC1.....
640	.	SUBUA
651	.	.
649	.	. <----- DIUA
	DRUA	
	V	
	V	
652	.	RTDIUA
659	.	@CPUA.....
664	.	.
662	DIUAUC	-----> DITB
	V	
	V	
667	RTUAUC	
674	CPUC2.....	
682	.	.
677	DIUCPC	-----> DIUB
	V	
	V	
685	RTUCPC	
692	.	SUBPC
700	CPPC.....	
	V	
	V	
703	RSPC	
	V	
	V	
709	RTPCNB	
716	.	SUBNB
728	CPNB1.....	
733	.	.
731	DINBNA	-----> DINA
	V	
	V	
736	RTNBJD	
743	.	SUBPD
	.	

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
755	.	.
753	.	. <----- DIPD DRPD
756	.	CPPD2 . . . . . V V
759	.	RSPD V V
765	.	RTPDNC
772	.	.
783	.	CPNC . . . . . V V
786	.	RTNCJE
793	.	.
807	.	SUBJE1
810	.	CPJE1 . . . . . V V
817	.	RTJEJD
831	.	.
836	.	.
834	.	DIJJC . . . . . DIJDJC V V
839	.	RTJDFC
846	.	.
862	.	SUBJE2
859	.	.
865	.	RETJE2 . . . . . RTJE2 V V
872	.	RTJEFC
885	.	.
888	CPFCSR . . . . .	.
893	.	.
891	DISRX	DISR3 . . . . .
898	.	.
896	.	DIUB . . . . . DRUCUB V V
899	RTUCUB	.

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
908	.	SUBUB
918	.	@CPUB.....
924	.	-----> DIUE
921	DIUBSF	
	V	
	V	
927	RTUBSF	
	.	
934	.	SUBTB
	.	
950	.	.
948	.	<----- DITB DRTB
	.	V
	.	V
951	.	RTDITB
	.	
958	.	CPTB.....
	.	
963	.	-----> DITA
961	DITBTA	
	V	
	V	
966	RTTBSF	
	.	
973	.	SUBSF
	.	
986	CPSF.....	
	V	
	V	
989	RSSF	
	.	
997	-----> DIRJ1	
995	DISFRJ	
	V	
	V	
1000	RTSFSH	
	.	
1007	.	SUBSH
	.	
1018	CPSH.....	
	V	
	V	
1021	RSSH	
	.	
1030	-----> DIRJ2	
1028	DISHRJ	
	V	
	V	
1033	RTSHSG	
	.	
1040	.	SUBTA
	.	
1055	.	.
1053	.	<----- DITA DRTA
	.	V

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE	(V) ROUTING	(--->) DIVERSION OR PUMP FLOW
NO.	(.) CONNECTOR	(<---) RETURN OF DIVERTED OR PUMPED FLOW
1056	.	V RTDITA
1063	.	@CPTA..... V V
1066	.	RTTASG
1073	.	SUBSG
1084	CPSG..... V V	
1087	RSSG	
1095	.	-----> DIRJ4
1093	DISGRJ	
1098	V V RTSGSE	
1105	.	SUBSC
1121	.	-----> DISD
1119	DISCSD	
1124	V V RTSCSE	
1131	.	SUBSE
1140	CPSE..... V V	
1143	RSSE	
1151	.	-----> DIRJ5
1149	DISERJ	
1154	V V RTSERI	
1161	.	SUBRJ
1173	.	-----> DIRJ1 CPRJ1 V V
1174	.	RTSFRJ
1183	.	-----> DIRJ2 CPRJ2 V V
1181	.	RTSHRJ
1184	.	
1191	.	@CPRJ3..... V V
1194	.	RTRJ3

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
.	.	.
1203	.	.
1201	.	. <----- DIRJ4 CPRJ4A
1204	.	CPRJ4B . . . . . V V
1207	.	RTSGRJ
1216	.	.
1214	.	. <----- DIRJ5 CPRJ5 V V
1217	.	RTSERJ
1224	.	@CPRJ6 . . . . . V V
1227	.	RSRJ
1236	.	.
1234	.	. -----> DIPA2 DIRJPA V V
1239	.	RTRJRI
1249	.	.
1246	.	. -----> DIOE3 DIRIOE V V
1252	.	RTRIRI
1259	.	SUBUE
1270	.	.
1268	.	. <----- DIUE DRUE
1271	.	.
1274	.	CPUE . . . . . V V
1280	.	RSUE V V
1280	.	RTUEPB
1287	.	.
1298	.	SUBPB
1298	.	.
1303	.	.
1301	.	. -----> DIPAL1 DIPBPA V V
1306	.	RTPBNA
1313	.	SUBNA
1330	.	.
1328	.	. <----- DINA CPNA1

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
	.	.
	.	V
1331	.	V
	.	.
1338	.	@CPNA.....
	.	V
	.	V
1341	.	RTNAJC
	.	.
1348	.	SUBJC
	.	.
1365	.	-----> RETJC
1362	.	RETJC
	.	.
1370	.	-----<----- DIJC
1368	.	DRJC
	.	V
	.	V
1371	.	RTDIJC
	.	.
1378	.	@CPJC.....
	.	.
1383	.	-----> DIJB
1381	.	DIJCJB
	.	V
	.	V
1386	.	RTJCFB
	.	.
1393	.	SUBFB
	.	.
1406	.	CPFB.....
	.	.
1412	.	-----> DISRX
1409	.	DIFBSR
	.	.
1415	.	SUBPA
	.	.
1429	.	-----<----- DIPA1
1427	.	DRPA
	.	V
	.	V
1430	.	RTDIPA
	.	.
1439	.	-----<----- DIPA2
1437	.	DRPA2
	.	V
	.	V
1440	.	RTRJPA
	.	.
1447	.	@CPPA.....
	.	.
1452	.	-----> DIOE
1450	.	DIPAOE
	.	V
	.	V
1455	.	RTPAMH
	.	.
1462	.	SUBMH

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
1474	.	CPMH..... V V
1477	.	RTMHMD
1484	.	SUBMD
1502	.	-----> RETMD
1499	.	RETMD
1505	.	CPMD.....
1510	.	-----> DIJB1
1508	.	DIMDJB
1516	.	-----> DIMFX
1513	.	DIMDMF
1519	.	SUBMI
1534	.	-----> RETMI
1531	.	RETMI
1537	.	SUBMG
1552	.	-----> RETMG
1549	.	RETMG
1555	.	CPMG..... V V
1558	.	RTMGJB
1565	.	SUBJB
1580	.	CPJB.....
1585	.	-----> DIJB
1583	.	DRJB V V
1586	.	RTDIJB
1595	.	-----> DIJB1
1593	.	CPJB2 V V
1596	.	RDIJB1
1603	.	@CPJB.....
1608	.	-----> DIEE
1606	.	DIJBEE V V

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE	(V) ROUTING	(--->) DIVERSION OR PUMP FLOW
NO.	(.) CONNECTOR	(<---) RETURN OF DIVERTED OR PUMPED FLOW
1611	.	.
	.	.
1618	.	.
	.	.
1635	.	.
	.	.
1641	.	.
1638	.	DISRX2 DIFASR
	.	.
1644	@CPR11	.
	.	.
1647	.	SUBRI
	.	.
1657	.	SUBSB V V
1668	.	RSSB
	.	.
1674	.	SUBSD
	.	.
1688	.	.
1686	.	DISD DRSD
	.	.
1689	.	@CPSD V V
1693	.	RSSD V V
1700	.	RTSDRI
	.	.
1707	CPR12	.
	V	.
	V	.
1710	RSRI	.
	V	.
	V	.
1716	RTRIRH	.
	.	.
1723	.	SUBSA
	.	.
1735	.	DIRF DISARF
1733	.	V V
1738	.	RTSARH
	.	.
1745	.	SUBRH
	.	.
1757	CPRH	.
	V	.
	V	.
1760	RSRH	.
	.	.
1768	.	DIOE2 CPRH2
1767	V	.
	V	.

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE	(V) ROUTING	(--->) DIVERSION OR PUMP FLOW
NO.	(.) CONNECTOR	(<---) RETURN OF DIVERTED OR PUMPED FLOW
1772	.	RRHOG1
	.	.
1780	.	-----> DIOD1
1779	DIOG1	
	V	
	V	
1783	RRHOG2	
	.	
1790	.	SUBRG
	.	.
1804	.	-----> RETRF
1801	RETRG	
	V	
	V	
1807	RTRGRF	
	.	
1814	.	SUBRF
	.	.
1829	.	.
1827	.	DRRF <----- DIRF
	.	V
	.	V
1830	.	RTDIRF
	.	.
1837	@CPRF	.....
	.	.
1842	.	-----> DIRE
1840	DIRFRE	
	V	
	V	
1845	RTRFOG	
	.	
1852	.	SUBOG
	.	.
1864	CPOG	.....
	V	
	V	
1867	RSOG	
	.	
1875	.	-----> DIOD2
1873	DIOGOD	
	V	
	V	
1878	RTOGOF	
	.	
1885	.	SUBOF
	.	.
1896	.	SUBRE
	.	.
1912	.	.
1910	.	CPRE <----- DIRE
	.	V
	.	V
1913	.	RTDIRE
	.	.
1920	.	@CPRE .....
	.	V
	.	V
1923	.	RTREOF

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
.	.	.
1930	CPOF . . . . . V V	
1933	RSOF . . . . . V V	
1940	RTOFOB . . . . .	
1947	. . . . . SUBOB	
1961	. . . . .	SUBRD . . . . .
1977	. . . . .	-----> DIOB
1975	. . . . .	DIRDOB . . . . . V V
1980	. . . . .	RTRDRC . . . . .
1987	. . . . .	SUBRC . . . . .
2002	. . . . .	CPRC . . . . . V V
2005	. . . . .	RTRCRB . . . . .
2012	. . . . .	SUBRB . . . . .
2025	. . . . .	CPRB . . . . .
2030	. . . . .	-----> DIKA3
2028	. . . . .	DIRBKA . . . . . V V
2033	. . . . .	RTRBRA . . . . .
2040	. . . . .	SUBRA . . . . .
2053	. . . . .	CPRA . . . . .
2058	. . . . .	-----> DIKA4
2056	. . . . .	DIRAKA . . . . .
2063	. . . . .	-----> DIAFX
2061	. . . . .	DIKAAF . . . . .
2068	. . . . .	-----<----- DIOB
2066	. . . . .	CPOB2 . . . . . V V
2069	. . . . .	RTDIOB . . . . .
2076	@CPOB . . . . . V V	
2079	RSOB . . . . . V V	

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
2086	.	RTOBLE
	.	.
2093	.	SUBLE
	.	.
2104	.	CPLE .....
	.	V
	.	V
2107	.	RSLE
	.	.
2115	.	-----> DILD
2113	.	DILELD
	.	V
	.	V
2118	.	RTLEKD
	.	.
2125	.	SUBKD
	.	.
2140	.	CPKD .....
	.	V
	.	V
2143	.	RSKD
	.	V
	.	V
2150	.	RKDKA1
	.	V
	.	V
2157	.	RSKA1
	.	.
2165	.	-----> DILA
2163	.	DIKALA
	.	V
	.	V
2168	.	RKDKA2
	.	.
2175	.	SUBKA
	.	.
2194	.	-----> RETKA
2191	.	RETKA
	.	.
2199	.	.
2197	.	CPKA3 <----- DIKA3
	.	V
	.	V
2200	.	RTDIKA
	.	.
2209	.	.
2207	.	CPKA4 <----- DIKA4
	.	.
2210	.	CPKA .....
	.	.
2215	.	-----> DIKB
2213	.	DIKAKB
	.	.
2218	.	SUBEC
	.	.
2232	.	CPEC .....
	.	.
2236	.	SUBAD

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING (.) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
2250	.	.
2255	.	SUBAC
2269	.	SUBAB
2283	CPSR7	.
2286	.	SUBOE
2302	.	-----> RETOE
2299	.	RETOE
2307	.	.
2305	.	<----- DIOE CPOE1 V V
2308	.	RTDIOE
2317	.	.
2315	.	.<----- DIOE2 CPOE2
2320	.	.
2318	.	.<----- DIOE3 CPOE3
2321	@CPOE	.
2326	.	-----> DIOD
2324	.	DIOEOD V V
2329	.	RTOEMF
2336	.	SUBMF
2353	.	.
2351	.	.<----- DIMFX CPMF V V
2354	.	RTMDMF
2361	.	CPMF1
2366	.	-----> DIEB
2364	.	DIMFEB V V
2369	.	RTMFMC
2376	.	SUBOD
2392	.	-----> RETOD
2389	.	RETOD

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING ( . ) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW	
2397	.	.	<----- DIOD
2395	.	.	DROD
			V
			V
2398	.	.	RTDIOD
			.
2412	.	.	.
2410	.	.	.<----- DIOD1
			DROD2
			.
2415	.	.	.
2413	.	.	.<----- DIOD2
			DROD3
			.
2416	.	@CPOD.....	
		.	
2421	.	.	-----> DIOC
2419	.	.	DIODOC
			V
			V
2424	.	.	RTODMC
			.
2431	.	.	SUBMC
			.
2446	.	@CPMC1.....	
		.	
2451	.	.	-----> DIMB
2449	.	.	DIMCMB
			V
			V
2454	.	.	RTMCIE
			.
2463	.	.	<----- DIEB
2461	.	.	DREB
			.
2464	.	.	SUBEB
			.
2475	.	.	SUBED
			.
2490	.	.	CPEB1.....
			.
2493	.	.	CPEB2.....
			V
			V
2496	.	.	RTEBIE
			.
2505	.	.	SUBIE
			.
2519	.	.	SUBID
			.
2533	.	.	CPIE1.....
			.
2536	.	.	CPIE2.....
			V
			V
2539	.	.	RTIEIB
			.
2548	.	.	SUBIB

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING ( . ) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
2562	.	.
	.	SUBIC
	.	.
2577	.	CPIB1.....
	.	.
2580	.	SUBOC
	.	.
2592	.	.
2590	.	DROC
	.	V
	.	V
2593	.	RTDIOC
	.	.
2600	.	CPOC.....
	.	V
	.	V
2603	.	RTOCMB
	.	.
2610	.	SUBMB
	.	.
2627	.	.
2625	.	DRMB
	.	V
	.	V
2628	.	RTDIMB
	.	.
2635	.	@CPMB.....
	.	V
	.	V
2638	.	RTMBIB
	.	.
2645	.	@CPIB2.....
	.	V
	.	V
2648	.	RTIBIA
	.	.
2657	.	SUBME
	.	V
	.	V
2669	.	RTMEIA
	.	.
2676	.	SUBIA
	.	.
2688	.	CPIA.....
	.	V
	.	V
2691	.	RTIAHB
	.	.
2700	.	SUBHB
	.	.
2712	.	CPHB1.....
	.	.
2715	.	SUBLD
	.	.
2727	.	.
2725	.	DILD
	.	DRLD
	.	V

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING ( . ) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
2728	.	.
	.	V RTDILD
	.	.
2735	.	@CPLD..... V V
2738	.	RTLDMA
	.	.
2745	.	SUBMA
	.	.
2757	.	CPMA..... V V
2760	.	RTMAHB
	.	.
2767	.	@CPHB2..... V V
2770	.	RTHBDA
	.	.
2779	.	SUBDA
	.	.
2791	.	CPDA..... V V
2794	.	RTDACC
	.	.
2803	.	SUBCC
	.	.
2816	.	CPCC1.....
	.	.
2819	.	SUBEE
	.	.
2836	.	.
2834	.	.<----- DIEE CPEE1 V V
	.	.
2837	.	RTDIEE
	.	.
2844	.	CPEC..... V V
2847	.	RTEEEA
	.	.
2854	.	SUBEA
	.	.
2869	.	CPEA..... V V
2872	.	RTEADC
	.	.
2878	.	SUBDC
	.	.
2891	.	CPDC..... V V
2894	.	RTDCCC
	.	.

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING ( . ) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
2901	.	.
	.	SUBDD
	.	V
	.	V
2912	.	RTDDCC
	.	.
2919	.	CPCC2.....
	V	
	V	
2922	.	RTCCCB
	.	.
2931	.	SUBCB
	.	.
2945	.	CPCB1.....
	.	
2948	.	SUBLB
	.	V
	.	V
2960	.	RTLBAH
	.	.
2967	.	SUBHA
	.	.
2978	.	CPHA.....
	V	
	V	
2981	.	RTHAGD
	.	.
2988	.	SUBKC
	.	V
	.	V
3000	.	RTKCGD
	.	.
3008	.	SUBGD
	.	.
3021	.	.
	.	.
	.	SUBGC
	V	
	V	
3031	.	RTGCGD
	.	.
3038	.	CPGD.....
	V	
	V	
3041	.	RTGDCB
	.	.
3048	.	CPCB.....
	V	
	V	
3051	.	RTCBCA
	.	.
3060	.	SUBCA
	.	.
3076	.	CPCA1.....
	.	
3079	.	SUBGB
	.	V
	.	V
3089	.	RTGBCA
	.	.
	.	.

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE NO.	(V) ROUTING ( . ) CONNECTOR	(--->) DIVERSION OR PUMP FLOW (<---) RETURN OF DIVERTED OR PUMPED FLOW
3096	.	CPCA..... V V
3099	.	RTCABC
3108	.	SUBBC
3125	.	CPBC..... .
3128	.	SUBBB V V
3141	.	RTBBBA
3148	.	SUBBA
3163	.	CPBA..... V V
3166	.	RTBAAA
3173	.	SUBAA
3192	.	CPAA..... .
3195	.	SUBLC
3209	.	-----> RETLC
3206	.	RETL C V V
3212	.	RTLCLA
3219	.	SUBLA
3236	.	-----> RETLA
3233	.	RETL A
3241	.	-----<----- DILA
3239	.	DRDILA V V
3242	.	RTDILA
3249	.	@CPLA..... V V
3252	.	RTLAKB
3259	.	SUBKB
3273	.	-----<----- DIKB
3271	.	DRKB V V
3274	.	RTDIKB

**SCHEMATIC DIAGRAM OF STREAM NETWORK**  
**INPUT**

LINE	(V) ROUTING	(--->) DIVERSION OR PUMP FLOW
NO.	( . ) CONNECTOR	( <--- ) RETURN OF DIVERTED OR PUMPED FLOW
3281	.	.
	.	.
3284	.	.
	.	.
3293	.	.
	.	.
3307	.	.
	.	.
3321	.	DUR.....

(\*\*\* ) RUNOFF ALSO COMPUTED AT THIS LOCATION

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***Appendix I***  
***Comparison of***  
***6- & 24-hour Peak Discharges***

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

<b>Basin ID</b>	<b>100yr-6hr</b>	<b>100yr-24hr</b>	<b>Controlling</b>	
	<b>cfs</b>	<b>cfs</b>	<b>storm</b>	<b>cfs</b>
SUBWD	595	432	6	595
RTWDXA	551	399	6	551
SUBXA	580	425	6	580
CPXA1	740	525	6	740
DIZZ1				
DIXAO	740	525	6	740
RTXAWC	705	505	6	705
SUBWB	1,154	880	6	1,154
RTWBWC	1,092	823	6	1,092
SUBWC	922	674	6	922
CPWC	1,938	1,527	6	1,938
DIQE				
DIWCWA	1,938	1,527	6	1,938
RTWCWA	948	709	6	948
SUBWA	1,196	872	6	1,196
CPWA1	941	883	6	941
SUBVD	1,195	917	6	1,195
RTVDWA	941	695	6	941
CPWA2	1,159	1,076	6	1,159
DIQD	707	628	6	707
DIWAVC	452	448	6	452
RTWAVC	375	359	6	375
SUBVC	1,177	857	6	1,177
CPVC1	776	872	24	872
SUBVB	1,651	1,299	6	1,651
RTVBVC	1,049	775	6	1,049
CPVC2	1,359	1,340	6	1,359
DIVA	32	32	6	32
DIVCQA	1,327	1,308	6	1,327
RTVCQA	1,024	888	6	1,024
SUBQA	779	581	6	779
CPQA2	1,325	1,149	6	1,325
RSQA	1,311	1,119	6	1,311
DIPF	490	456	6	490
DIQAPF	822	663	6	822
RTQAJH	781	640	6	781
SUBQE	1,654	1,324	6	1,654
DRQE				
RTDIQE				
CPQE	1,654	1,324	6	1,654
RSQE	1,575	1,198	6	1,575
RTQEQC	1,479	1,107	6	1,479
SUBQD	600	439	6	600
DRQD	707	628	6	707
RTDIQD	511	353	6	511
CPQD	665	439	6	665
RSQD	661	405	6	661
DIQB	190	81	6	190
DIQDQB	471	326	6	471

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

<b>Basin ID</b>	<b>100yr-6hr</b>	<b>100yr-24hr</b>	<b>Controlling</b>	
	<b>cfs</b>	<b>cfs</b>	<b>storm</b>	<b>cfs</b>
RTQDQC	423	288	6	423
SUBQC	1,160	878	6	1,160
CPQC	2,230	1,812	6	2,230
DISR	1,784	1,450	6	1,784
DIQCR	446	362	6	446
RTQCJI	299	246	6	299
SUBQB	852	629	6	852
DRQB	190	81	6	190
RTDIQB	170	69	6	170
CPQB	853	629	6	853
RSQB	705	521	6	705
RTQBH	597	441	6	597
SUBJH	1,096	812	6	1,096
CPJH	1,219	1,147	6	1,219
RTJHJI	1,196	1,118	6	1,196
SUBJI	760	563	6	760
CPJI	1,193	1,131	6	1,193
DISR1	1,193	1,131	6	1,193
DISRX				
SUBPF	1,297	947	6	1,297
RETPF	19	10	6	19
RETPF	1,297	947	6	1,297
DRPF	490	456	6	490
RTDIPF	484	448	6	484
@CPPF	1,297	956	6	1,297
RSPF	494	462	6	494
DIPE				
DIPFPE	494	462	6	494
RTPFJF	488	447	6	488
SUBUD	1,087	851	6	1,087
DIUA	263	206	6	263
DIUDUA	824	645	6	824
RTUDVA	637	483	6	637
SUBVA	1,195	869	6	1,195
DRVA	32	32	6	32
RTDIVA	22	23	24	23
CPVA1	1,195	869	6	1,195
CPVA2	1,024	898	6	1,024
DIUC	701	685	6	701
DIVAPE	323	213	6	323
SUBPE	1,303	944	6	1,303
DRPE				
RTDIPE				
CPPE	1,303	1,134	6	1,303
RSPE	1,111	1,035	6	1,111
DIPD	2	1	6	2
DIPEPD	1,109	1,033	6	1,109
RTPEJF	606	501	6	606
SUBJF	1,509	1,097	6	1,509
CPJF	786	1,072	24	1,072

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

<b>Basin ID</b>	<b>100yr-6hr</b>	<b>100yr-24hr</b>	<b>Controlling</b>	
	<b>cfs</b>	<b>cfs</b>	<b>storm</b>	<b>cfs</b>
RTJFJG	692	719	24	719
SUBJG	1,897	1,558	6	1,897
CPJG	1,266	1,563	24	1,563
CPJGSR	1,150	1,529	24	1,529
DISR2	1,150	1,529	24	1,529
DRUC	701	685	6	701
RTVAUC	544	444	6	544
SUBUC	927	682	6	927
@CPUC1	750	695	6	750
SUBUA	886	666	6	886
DRUA	263	206	6	263
RTDIUA	114	83	6	114
@CPUA	886	666	6	886
DITB	156	133	6	156
DIUAUC	624	531	6	624
RTUAUC	489	389	6	489
CPUC2	812	765	6	812
DIUB	684	650	6	684
DIUCPC	129	115	6	129
RTUCPC	74	46	6	74
SUBPC	932	684	6	932
CPPC	515	668	24	668
RSPC	76	44	6	76
RTPCNB	61	34	6	61
SUBNB	917	664	6	917
CPNB1	616	655	24	655
DINA	396	421	24	421
DINBNA	220	234	24	234
RTNBJD	114	90	6	114
SUBPD	1,174	856	6	1,174
DRPD	2	1	6	2
CPPD2	1,176	857	6	1,176
RSPD	94	33	6	94
RTPDNC	82	30	6	82
SUBNC	714	520	6	714
CPNC	647	515	6	647
RTNCJE	470	351	6	470
SUBJE1	732	528	6	732
CPJE1	612	538	6	612
RTJEJD	548	459	6	548
SUBJD	831	607	6	831
CPJD	915	1,014	24	1,014
DIJC	331	367	24	367
DIJDJC	584	647	24	647
RTJDFC	495	435	6	495
SUBJE2	742	544	6	742
RETJE	123	15	6	123
RETJE2	742	544	6	742
RTJEFC	595	427	6	595
SUBFC	910	666	6	910

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

Basin ID	100yr-6hr		Controlling	
	100yr-24hr cfs	cfs	storm	cfs
CPFC	1,052	1,030	6	1,052
CPFCSR	864	979	24	979
DISR3	864	979	24	979
DRUCUB	684	650	6	684
RTUCUB	682	641	6	682
SUBUB	260	193	6	260
@CPUB	809	746	6	809
DIUE				
DIUBSF	809	746	6	809
RTUBSF	799	726	6	799
SUBTB	1,037	811	6	1,037
DRTB	156	133	6	156
RTDITB	129	103	6	129
CPTB	1,051	822	6	1,051
DITA	254	199	6	254
DITBTA	797	623	6	797
RTTBSF	671	512	6	671
SUBSF	349	272	6	349
CPSF	1,593	1,412	6	1,593
RSSF	1,547	1,351	6	1,547
DIRJ1	464	405	6	464
DISFRJ	1,083	945	6	1,083
RTSFSH	1,073	936	6	1,073
SUBSH	298	220	6	298
CPSH	1,075	945	6	1,075
RSSH	1,050	913	6	1,050
DIRJ2	879	758	6	879
DISHRJ	172	155	6	172
RTSHSG	161	147	6	161
SUBTA	222	168	6	222
DRTA	254	199	6	254
RTDITA	239	184	6	239
@CPTA	396	306	6	396
RTTASG	389	297	6	389
SUBSG	247	183	6	247
CPSG	389	321	6	389
RSSG	374	320	6	374
DIRJ4	279	236	6	279
DISGRJ	95	85	6	95
RTSGSE	93	83	6	93
SUBSC	294	212	6	294
DISD	159	115	6	159
DISCSD	135	98	6	135
RTSCSE	113	80	6	113
SUBSE	409	297	6	409
CPSE	193	289	24	289
RSSE	173	168	6	173
DIRJ5	173	168	6	173
DISERJ				
RTSERI				

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

<b>Basin ID</b>	<b>100yr-6hr</b>	<b>100yr-24hr</b>	<b>Controlling</b>	
	<b>cfs</b>	<b>cfs</b>	<b>storm</b>	<b>cfs</b>
SUBRJ	207	152	6	207
CPRJ1	464	405	6	464
RTSFRJ	452	391	6	452
CPRJ2	879	758	6	879
RTSHRJ	859	747	6	859
@CPRJ3	1,299	1,131	6	1,299
RTRJ3	1,249	1,097	6	1,249
CPRJ4A	279	236	6	279
CPRJ4B	1,470	1,299	6	1,470
RTSGRJ	1,453	1,280	6	1,453
CPRJ5	173	168	6	173
RTSERJ	167	164	6	167
@CPRJ6	1,575	1,416	6	1,575
RSRJ	1,405	1,270	6	1,405
DIPA2	386	323	6	386
DIRJPA	1,019	947	6	1,019
RTRJRI	1,010	942	6	1,010
DIOE3	249	227	6	249
DIRIOE	761	715	6	761
RTRIRI	760	713	6	760
SUBUE	143	107	6	143
DRUE				
CPUE	143	107	6	143
RSUE	1	1	6	1
RTUEPB	1	1	6	1
SUBPB	644	476	6	644
CPPB1	643	475	6	643
DIPA1	118	88	6	118
DIPBPA	526	388	6	526
RTPBNA	313	221	6	313
SUBNA	689	551	6	689
CPNA1	396	421	24	421
RTDINA	207	163	6	207
@CPNA	994	772	6	994
RTNAJC	854	666	6	854
SUBJC	725	570	6	725
RETJC	190	108	6	190
RETJC	725	570	6	725
DRJC	331	367	24	367
RTDIJC	236	196	6	236
@CPJC	1,283	1,021	6	1,283
DIJB	590	470	6	590
DIJCJB	693	552	6	693
RTJCFB	643	513	6	643
SUBFB	675	515	6	675
CPF伯	646	523	6	646
DISRX	646	523	6	646
DIFBSR				
SUBPA	593	435	6	593
DRPA	118	88	6	118

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

Basin ID	100yr-6hr		Controlling	
	100yr-24hr cfs	cfs	storm	cfs
RTDIPA	41	31	6	41
DRPA2	386	323	6	386
RTRJPA	313	257	6	313
@CPPA	608	435	6	608
DIOE	78	76	6	78
DIPAOE	357	348	6	357
RTPAMH	276	243	6	276
SUBMH	325	248	6	325
CPMH	350	292	6	350
RTMHMD	311	263	6	311
SUBMD	376	274	6	376
RETMMD	376	274	6	376
RETMDD	319	218	6	319
CPMD	331	294	6	331
DIJB1	68	61	6	68
DIMDJB	263	234	6	263
DIMFX	263	234	6	263
DIMDMF				
SUBMI	681	503	6	681
RETRMI	483	362	6	483
RETRMI	681	503	6	681
SUBMG	202	150	6	202
RETRMG	183	150	6	183
RETRMG	200	118	6	200
CPMG	836	616	6	836
RTMGJB	348	233	6	348
SUBJB	491	393	6	491
CPJB	511	390	6	511
DRJB	590	470	6	590
RTDIJB	539	431	6	539
CPJB2	68	61	6	68
RDIJB1	52	47	6	52
@CPJB	745	616	6	745
DIEE	268	222	6	268
DIJBEE	477	394	6	477
RTJBFA	434	361	6	434
SUBFA	586	428	6	586
CPFA	486	420	6	486
DISRX2	486	420	6	486
DIFASR				
@CPRI1	760	713	6	760
SUBRI	420	310	6	420
SUBSB	226	174	6	226
RSSB	184	131	6	184
SUBSD	253	190	6	253
DRSD	159	115	6	159
@CPSD	431	310	6	431
RSSD	433	310	6	433
RTSDRI	418	305	6	418
CPRI2	772	741	6	772

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

Basin ID	100yr-6hr	100yr-24hr	Controlling	
	cfs	cfs	storm	cfs
RSRI	771	741	6	771
RTRIRH	723	696	6	723
SUBSA	811	594	6	811
DIRF	406	297	6	406
DISARF	406	297	6	406
RTSARH	239	165	6	239
SUBRH	285	218	6	285
CPRH	737	717	6	737
RSRH	735	714	6	735
DIOE2				
CPRH2	735	714	6	735
RRHOG1	732	713	6	732
DIOD1				
DIOG1	732	713	6	732
RRHOG2	727	708	6	727
SUBRG	376	276	6	376
RETRG	134	23	6	134
RETRG	376	276	6	376
RTRGRF	93	81	6	93
SUBRF	652	500	6	652
DRRF	406	297	6	406
RTDIRF	140	101	6	140
@CPRF	700	576	6	700
DIRE	140	115	6	140
DIRFRE	560	461	6	560
RTRFOG	476	387	6	476
SUBOG	699	513	6	699
CPOG	1,222	1,146	6	1,222
RSOG	1,186	1,106	6	1,186
DIOD2	350	320	6	350
DIOGOD	835	786	6	835
RTOGOF	823	773	6	823
SUBOF	608	445	6	608
SUBRE	329	242	6	329
CPRE	140	115	6	140
RTDIRE	93	72	6	93
@CPRE	329	245	6	329
RTREOF	302	237	6	302
CPOF	1,079	1,022	6	1,079
RSOF	1,008	951	6	1,008
RTOFOB	982	927	6	982
SUBOB	992	718	6	992
SUBRD	351	245	6	351
DIOB	141	98	6	141
DIRDOB	211	147	6	211
RTRDRC	121	79	6	121
SUBRC	397	303	6	397
CPRC	374	301	6	374
RTRCRB	291	217	6	291
SUBRB	391	288	6	391

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

<b>Basin ID</b>	<b>100yr-6hr</b>	<b>100yr-24hr</b>	<b>Controlling</b>	
	<b>cfs</b>	<b>cfs</b>	<b>storm</b>	<b>cfs</b>
CPRB	323	284	6	323
DIKA3	162	142	6	162
DIRBKA	162	142	6	162
RTRBRA	145	112	6	145
SUBRA	149	109	6	149
CPRA	145	113	6	145
DIKA4	119	90	6	119
DIRAKA	25	25	6	25
DIAFX	25	25	6	25
DIKAAF				
CPOB2	141	98	6	141
RTDIOB	56	36	6	56
@CPOB	1,007	964	6	1,007
RSOB	679	675	6	679
RTOBLE	676	674	6	676
SUBLE	223	162	6	223
CPLE	674	674	6	674
RSLE	668	673	24	673
DILD	206	208	24	208
DILELD	462	465	24	465
RTLEKD	460	465	24	465
SUBKD	316	241	6	316
CPKD	458	465	24	465
RSKD	453	463	24	463
RKDKA1	453	462	24	462
RSKA1	322	339	24	339
DILA	109	122	24	122
DIKALA	213	217	24	217
RKDKA2	213	217	24	217
SUBKA	1,084	873	6	1,084
RETKA	367	43	6	367
RETKA	1,084	873	6	1,084
CPKA3	162	142	6	162
RTDIKA	153	118	6	153
CPKA4	119	90	6	119
CPKA	1,084	921	6	1,084
DIKB	435	533	24	533
DIKAKB	388	388	6	388
SUBEC	24	18	6	24
CPEC	493	382	6	493
SUBAD	269	196	6	269
CPAD	544	587	24	587
SUBAC	328	237	6	328
SUBAB	381	276	6	381
CPSR7	955	1,063	24	1,063
SUBOE	560	405	6	560
RETOE	88	10	6	88
RETOE	560	405	6	560
CPOE1	78	76	6	78
RTDIOE	37	32	6	37

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

<b>Basin ID</b>	<b>100yr-6hr</b>	<b>100yr-24hr</b>	<b>Controlling</b>	
	<b>cfs</b>	<b>cfs</b>	<b>storm</b>	<b>cfs</b>
CPOE2				
CPOE3	249	227	6	249
@CPOE	562	405	6	562
DIOD	66	65	6	66
DIOEOD	332	329	6	332
RTOEMF	194	180	6	194
SUBMF	600	488	6	600
CPMF	263	234	6	263
RTMDMF	210	187	6	210
CPMF1	600	553	6	600
DIEB	269	256	6	269
DIMFEB	312	297	6	312
RTMFMC	267	243	6	267
SUBOD	681	504	6	681
RETOD	13	6	6	13
RETOD	681	504	6	681
DROD	66	65	6	66
RTDIOD	34	32	6	34
DROD2				
DROD3	350	320	6	350
@CPOD	681	589	6	681
DIOC	108	106	6	108
DIODOC	491	483	6	491
RTODMC	423	371	6	423
SUBMC	683	555	6	683
@CPMC1	808	754	6	808
DIMB	309	288	6	309
DIMCMB	499	465	6	499
RTMCIE	481	442	6	481
DREB	269	256	6	269
SUBEB	149	112	6	149
SUBED	251	183	6	251
CPEB1	331	247	6	331
CPEB2	602	465	6	602
RTEBIE	450	338	6	450
SUBIE	250	195	6	250
SUBID	388	289	6	388
CPIE1	564	477	6	564
CPIE2	709	694	6	709
RTIEIB	693	664	6	693
SUBIB	364	280	6	364
SUBIC	256	187	6	256
CPIB1	701	670	6	701
SUBOC	613	449	6	613
DROC	108	106	6	108
RTDIOC	74	67	6	74
CPOC	613	450	6	613
RTOCMB	316	221	6	316
SUBMB	684	556	6	684
DRMB	309	288	6	309

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

<b>Basin ID</b>	<b>100yr-6hr</b>	<b>100yr-24hr</b>	<b>Controlling</b>	
	<b>cfs</b>	<b>cfs</b>	<b>storm</b>	<b>cfs</b>
RTDIMB	284	259	6	284
@CPMB	756	726	6	756
RTMBIB	685	646	6	685
@CPIB2	1,191	1,140	6	1,191
RTIBIA	1,160	1,106	6	1,160
SUBME	268	193	6	268
RTMELA	163	109	6	163
SUBIA	347	254	6	347
CPIA	1,175	1,131	6	1,175
RTIAHB	1,143	1,099	6	1,143
SUBHB	356	256	6	356
CPHB1	1,143	1,099	6	1,143
SUBLD	460	329	6	460
DRLD	206	208	24	208
RTDILD	202	207	24	207
@CPLD	705	329	6	705
RTLDMA	236	283	24	283
SUBMA	185	132	6	185
CPMA	318	404	24	404
RTMAHB	194	220	24	220
@CPHB2	1,202	1,172	6	1,202
RTHBDA	1,199	1,170	6	1,199
SUBDA	324	239	6	324
CPDA	1,199	1,169	6	1,199
RTDACC	1,192	1,167	6	1,192
SUBCC	780	621	6	780
CPCC1	1,192	1,165	6	1,192
SUBEE	395	311	6	395
CPEE1	268	222	6	268
RTDIEE	263	217	6	263
RTEEEA	387	272	6	387
SUBEA	549	458	6	549
CPEA	499	455	6	499
RTEADC	395	352	6	395
SUBDC	546	427	6	546
CPDC	451	419	6	451
RTDCCC	362	333	6	362
SUBDD	142	104	6	142
RTDDCC	98	70	6	98
CPCC2	1,274	1,355	24	1,355
RTCCCB	1,232	1,276	24	1,276
SUBCB	565	457	6	565
CPCB1	1,232	1,276	24	1,276
SUBLB	173	125	6	173
RTLBHA	145	98	6	145
SUBHA	145	106	6	145
CPHA	160	105	6	160
RTHAGD	123	82	6	123
SUBKC	199	143	6	199
RTKCGD	87	58	6	87

Dibble & Associates  
 1084&1084-6 - Durango ADMP Hydrology  
**HEC-1 Storm Comparison Summary -- 05/29/01**

<b>Basin ID</b>	<b>100yr-6hr</b>	<b>100yr-24hr</b>	<b>Controlling</b>	
	<b>cfs</b>	<b>cfs</b>	<b>storm</b>	<b>cfs</b>
SUBGD	657	521	6	657
SUBGC	343	247	6	343
RTGCGD	181	116	6	181
CPGD	743	614	6	743
RTGDCB	647	524	6	647
CPCB	1,232	1,295	24	1,295
RTCBCA	1,199	1,272	24	1,272
SUBCA	584	479	6	584
CPCA1	1,198	1,271	24	1,271
SUBGB	309	220	6	309
RTGBCA	115	77	6	115
CPCA	1,198	1,271	24	1,271
RTCABC	1,185	1,267	24	1,267
SUBBC	327	244	6	327
CPBC	1,185	1,267	24	1,267
SUBBB	206	157	6	206
RTBBBA	127	93	6	127
SUBBA	250	179	6	250
CPBA	1,185	1,267	24	1,267
RTBAAA	1,172	1,264	24	1,264
SUBAA	204	144	6	204
CPAA	1,172	1,264	24	1,264
SUBLC	319	231	6	319
RETLC	319	231	6	319
RETLCL	43	6	6	43
RTLCLA	5	2	6	5
SUBLA	490	351	6	490
RETLA	490	351	6	490
RETLA	441	255	6	441
DRDILA	109	122	24	122
RTDILA	108	122	24	122
@CPLA	574	423	6	574
RTLAKB	103	123	24	123
SUBKB	495	357	6	495
DRKB	435	533	24	533
RTDIKB	385	459	24	459
@CPKB	491	519	24	519
SUBGA	356	255	6	356
SUBWT1	1,347	1,000	6	1,347
SUBWT2	423	306	6	423
DUR	1,347	1,613	24	1,613

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***Appendix J***  
***Comparison of***  
***Durango ADMP & Tolleson FIS Hydrology***

**Dibble & Associates**  
**Durango ADMP Hydrology**  
**HEC-1 Comparison Summary**

\*\* Did Not Exist in Tolleson Model

Basin ID	Flow rates (cfs)		Difference	
	Tolleson	Durango	cfs	%
SUBAB	250	276	26	10.4%
SUBAC	235	237	2	0.9%
SUBAD	236	196	-40	-16.9%
SUBBA	161	179	18	11.2%
SUBBB	179	157	-22	-12.3%
SUBBC	235	244	9	3.8%
SUBCA	587	479	-108	-18.4%
SUBCB	540	457	-83	-15.4%
SUBCC	691	621	-70	-10.1%
SUBDA	267	239	-28	-10.5%
SUBDC	545	427	-118	-21.7%
SUBDD	118	104	-14	-11.9%
SUBEA	607	458	-149	-24.5%
SUBEB	137	112	-25	-18.2%
SUBEC	54	31	-23	-42.6%
SUBED	250	183	-67	-26.8%
SUBEE	704	386	-318	-45.2%
SUBFA	217	475	258	118.9%
SUBFB	449	515	66	14.7%
SUBFC	287	666	379	132.1%
SUBGA	258	255	-3	-1.2%
SUBGB	237	220	-17	-7.2%
SUBGC	243	247	4	1.6%
SUBGD	592	521	-71	-12.0%
SUBHA	359	106	-253	-70.5%
SUBHB	271	256	-15	-5.5%
SUBIA	281	254	-27	-9.6%
SUBIB	326	280	-46	-14.1%
SUBIC	244	187	-57	-23.4%
SUBID	340	289	-51	-15.0%
SUBIE	201	195	-6	-3.0%
SUBJB	531	393	-138	-26.0%
SUBJC	1153	570	-583	-50.6%
SUBJD	358	607	249	69.6%
SUBJE1	391	528	137	35.0%
SUBJE2	**	544		
SUBJF	1077	1,097	20	1.9%
SUBJG	**	1,558		
SUBJH	**	812		
SUBJI	**	563		
SUBKA	532	873	341	64.1%
SUBKB	322	357	35	10.9%
SUBKC	385	143	-242	-62.9%
SUBKD	330	241	-89	-27.0%
SUBLA	266	351	85	32.0%

**Dibble & Associates**  
**Durango ADMP Hydrology**  
**HEC-1 Comparison Summary**

\*\* Did Not Exist in Tolleson Model

Basin ID	Flow rates (cfs)		Difference	
	Tolleson	Durango	cfs	%
SUBLB	171	125	-46	-26.9%
SUBLC	109	231	122	111.9%
SUBLD	314	329	15	4.8%
SUBLE	212	162	-50	-23.6%
SUBMA	185	132	-53	-28.6%
SUBMB	631	556	-75	-11.9%
SUBMC	643	555	-88	-13.7%
SUBMD	509	274	-235	-46.2%
SUBME	218	193	-25	-11.5%
SUBMF	578	488	-90	-15.6%
SUBMG	176	150	-26	-14.8%
SUBMH	**	248		
SUBMI	**	503		
SUBNA	608	551	-57	-9.4%
SUBNB	346	664	318	91.9%
SUBNC	269	520	251	93.3%
SUBOB	250	718	468	187.2%
SUBOC	421	449	28	6.7%
SUBOD	447	504	57	12.8%
SUBOE	355	405	50	14.1%
SUBOF	263	445	182	69.2%
SUBOG	475	513	38	8.0%
SUBPA	461	435	-26	-5.6%
SUBPB	439	476	37	8.4%
SUBPC	459	684	225	49.0%
SUBPD	400	856	456	114.0%
SUBPE	800	944	144	18.0%
SUBPF	649	947	298	45.9%
SUBQA	517	581	64	12.4%
SUBQB	599	629	30	5.0%
SUBQC	541	878	337	62.3%
SUBQD	521	439	-82	-15.7%
SUBQE	1061	1,324	263	24.8%
SUBRA	158	109	-49	-31.0%
SUBRB	350	288	-62	-17.7%
SUBRC	394	303	-91	-23.1%
SUBRD	245	245	0	0.0%
SUBRE	242	242	0	0.0%
SUBRF	528	500	-28	-5.3%
SUBRG	143	276	133	93.0%
SUBRH	225	218	-7	-3.1%
SUBRI	318	310	-8	-2.5%
SUBRJ	186	152	-34	-18.3%
SUBSA	620	594	-26	-4.2%
SUBSB	229	174	-55	-24.0%
SUBSC	229	212	-17	-7.4%
SUBSD	137	190	53	38.7%

**Dibble & Associates**  
**Durango ADMP Hydrology**  
**HEC-1 Comparison Summary**

\*\* Did Not Exist in Tolleson Model

Basin ID	Flow rates (cfs)		Difference	
	Tolleson	Durango	cfs	%
SUBSE	163	297	134	82.2%
SUBSF	297	272	-25	-8.4%
SUBSG	186	183	-3	-1.6%
SUBSH	127	220	93	73.2%
SUBTA	211	168	-43	-20.4%
SUBTB	606	811	205	33.8%
SUBUA	646	666	20	3.1%
SUBUB	182	193	11	6.0%
SUBUC	636	682	46	7.2%
SUBUD	784	851	67	8.5%
SUBUE	132	107	-25	-18.9%
SUBVA	809	869	60	7.4%
SUBVB	1340	1,299	-41	-3.1%
SUBVC	683	857	174	25.5%
SUBVD	826	917	91	11.0%
SUBWA	868	872	4	0.5%
SUBWB	791	880	89	11.3%
SUBWC	609	674	65	10.7%
SUBWD	329	432	103	31.3%
SUBWT1	**	1,000		
SUBWT2	**	306		
SUBXA	395	425	30	7.6%

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**Appendix K**  
**DDMSW**  
*Beta Test Report*

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**DRAINAGE DESIGN MANAGEMENT SYSTEM FOR WINDOWS  
BETA TEST REPORT**

*Prepared for:*



*Prepared by:*



*May 16, 2001*

## **DDMSW Beta Test Report**

### **Duration and Type of Use**

Dibble & Associates has been using DDMSW since March, 2000 on several projects ranging in size from 13 sub-basins to more than 120 sub-basins for both the 24-hour and 6-hour storms. Over this time most of the features have been utilized. Extensive use of the Import/Export operations, as well as the Import DOS Family have been used. During this time we have found errors and "glitches" in the operation of the program. These are documented below along with suggestions for improving the interface and output.

### **Known Bugs**

During the initial testing several bugs were found that resulted in incorrect rainfall distribution for the 100-year, 24-hour, single storm event. This bug was also present in the older DDMS version of the software. This problem was corrected by issuing a new module for the program MCUHP2.EXE.

Some other known bugs are listed as follows:

- 1) The program allows the user to duplicate a current Project ID when creating a "new" project under the File pull-down menu.
- 2) If a project includes subbasins that use the Desert/Rangeland S-graph, DDMSW issues the error message, "CSGRAPH not found" and when the user chooses the "Develop Draft Model Data" command from the HEC-1 pull-down menu. DDMSW then creates an incorrect HEC-1 model.
- 3) When importing soils data, the map units do not show up in "Detail" tab of the Soil Data editor. Similar problems when importing land uses. This does not affect the data updates or creation/update of HEC-1 model. The only "problem" is that you don't see the map unit label in the detail tab.
- 4) Cannot import from latest Excel version - the first record (row) is deleted during the process. The user must save in Excel version 5.0 format for import to work correctly.
- 5) Program locks up when it encounters a non-default map unit while updating soils data. You cannot choose a "non-default" map unit from the pull-down, but you can enter one in the List tab. After that, you can't do anything else in the program. This is essentially a nuisance issue that results from a typo or other input mistake.
- 6) If the user specifies different methods for Basin and Reach Routing, there are errors in the HEC-1 model routing records created by DDMSW.
- 7) Kb calculated incorrectly in the Rational Method module.
- 8) DDMSW does not allow user to change the number of ordinates on the IT card - always forces 2000.
- 9) DDMSW does not update the HEC-1 file with changes to basin area (BA).

## New Bugs and Concerns

- 1) It is an annoyance to have to press the “I Agree” button upon opening DDMSW each time. Why not have this in the install routine where you read it once and move on.
- 2) The output features are very nice as they are but could benefit from having “selectable” variables that you could choose to print or not print (like HEC-RAS) Also, some of the columns are not wide enough for the ID name and “wrap” down. This just makes for odd-looking output.

Dibble & Associates  
1084 - Durango ADMP Hydrology  
**Routing Data - Normal Depth**

Page 1

Basin	Reach ID	RS Card			RC Card			1
		NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	
01	RTWDX A	4	0.025	0.025	0.025	2500	0.0016	Sta 0.0 0. Elev 0.0 0.
01	RTXA/W C	12	0.035	0.035	0.035	5100	0.0016	Sta 0.0 20.0 Elev 5.0 5.0
01	RTWB/ WC	3	0.025	0.025	0.025	2500	0.0020	Sta 0.0 100.0 Elev 5.0 4.0
01	RTWC/ WA	15	0.035	0.035	0.035	5200	0.0012	Sta 0.0 20.0 Elev 5.0 5.0
01	RIVDW/ A	2	0.100	0.020	0.100	2500	0.0030	Sta 0.0 47.00

Column wraps  
in reports.

- 3) When Importing a DOS family, it is important to watch the units on the sub-basin, soil and land use areas. DDMS allows units of acres or sq. miles but DDMSW will only read the value in as sq. miles thus resulting in very large areas if acres were chosen in DDMS.
- 4) DDMSW will not read a DSS file. This causes us to loose the “integration” and resort back to “the old way” where we could have a HEC-1 file and a DDMSW file which won’t match each other.
- 5) When importing a backup ZIP file, it would be a good idea to have it check the date of the file and ask if it was OK to overwrite like windows does when copying a file.
- 6) The date field on reports only has room for 7 digits. Therefore, when you have a report printed on November 10<sup>th</sup>, 2000, it will display as 1/10/2000 (See Example Below)

Dibble & Associates  
1084-IMPROVED - Durango ADMP Hydrology

**Soil Data**

1/10/2000

Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
GgA	0.128	43.8	0.25		
Ge	0.135	46.0	0.26		
Aa	0.006	2.1	0.26		
Vh	0.023	7.8	0.27		
CF	0.001	0.3	0.50		
GgA	0.089	20.6	0.25		
Gu	0.002	0.5	0.04		
Ao	0.025	5.7	0.04		
Gt	0.071	16.4	0.04		
		100.0			

Should be  
11/10/2000

- 7) The toggle to update HEC-1 from the RUN HEC-1 section doesn't work the same way that the UPDATE button in the EDIT HEC-1 section does.
- 8) It would be a nice feature to have a NOTES section so that text about the history of the model development could be entered. This would be especially useful for those who share files over a network so that they can keep track of revisions directly in DDMSW.

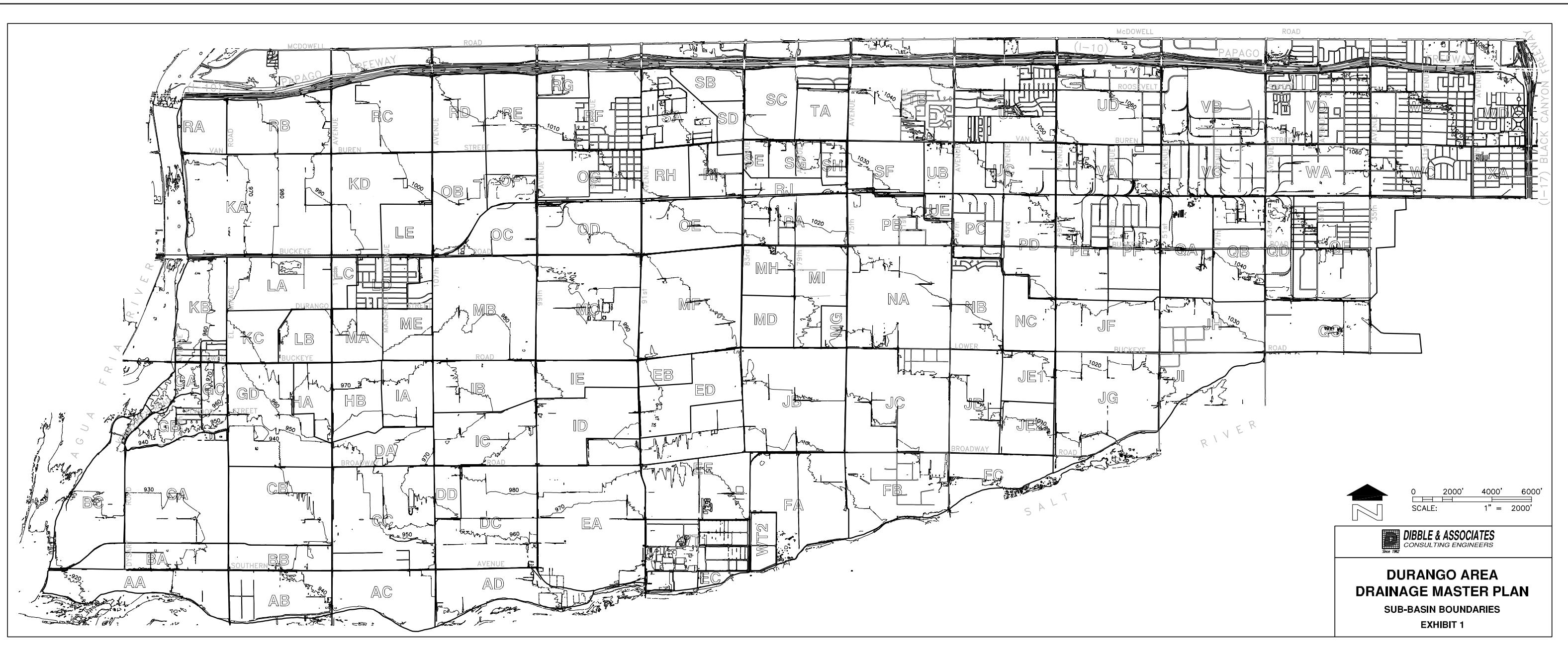
## CONCLUSION

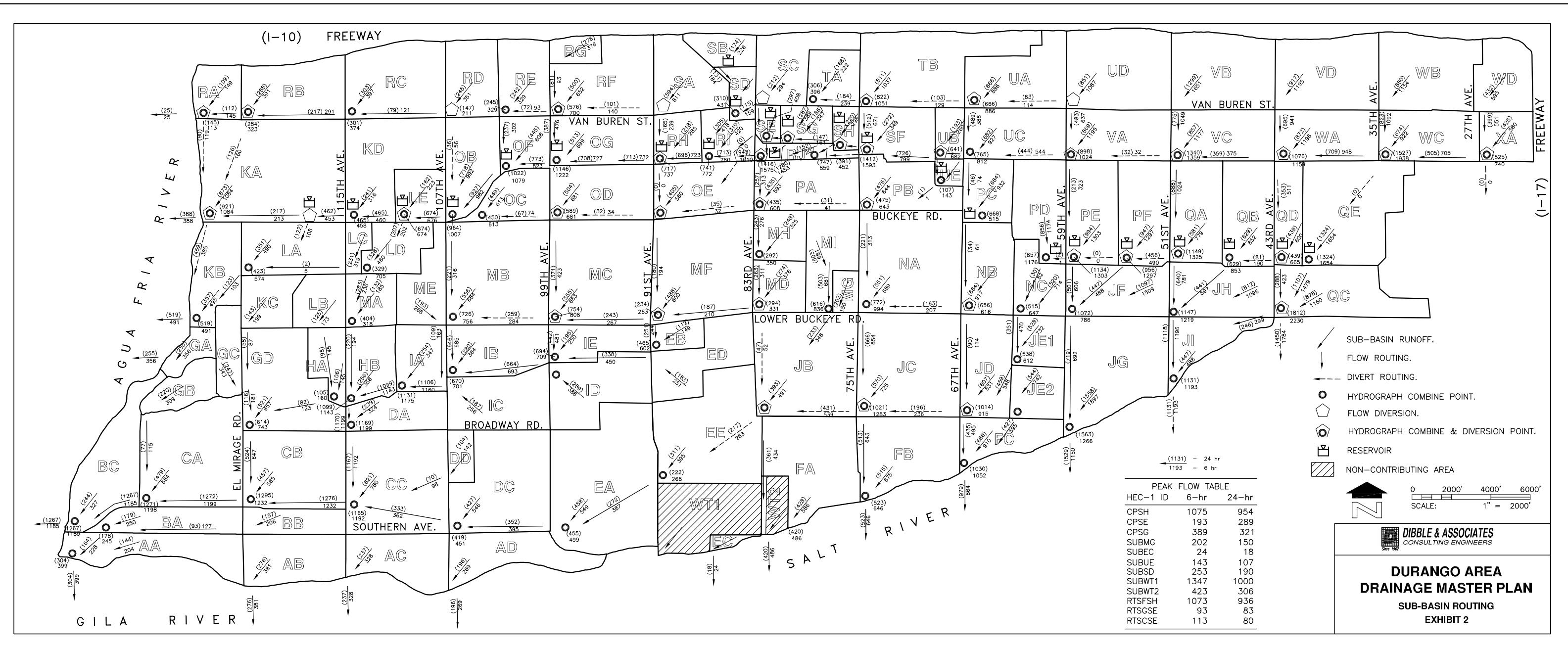
DDMSW has advanced greatly over its predecessor. It is easy to use and offers flexibility in input that can dramatically save time. However, DDMSW suffers from some of the same problems as other data base related programs and care must be taken to ensure proper data format and alignment is maintained. Once all of the beta testing issues are resolved DDMSW will be an excellent tool for the District as well as consultants.

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***Exhibits***







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